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(*Continued from page* 656)

CLINICAL ASPECTS OF DISEASES OF THE ALIMENTARY TRACT OF THE CAT

By

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(GLASGOW)

Despite the simultaneous counter-attraction of a paper on the organisation of practice, on the morning of Friday, August 12th, there was a good attendance, including a large number of lady practitioners, at Bishop Partridge Hall, for the discussion of the paper presented by Mr. W. L. Weipers, M.R.C.V.S., of Glasgow, on "Clinical Aspects of Diseases of the Alimentary Tract of the Cat."

Miss J. O. JOSHUA, M.R.C.V.S., of Finchley, was in the chair and opened the proceedings in the following terms: As this is one of the two opening sessions of the Congress of the National Veterinary Medical Association, I have very great pleasure in welcoming any of you who may not have attended sectional meetings of the N.V.M.A. before, and particularly any of you who may be attending from overseas for the first time. I should like to extend a very cordial invitation to you to take part in the discussion, should you so wish.

As you know, the theme of the N.V.M.A. Congress is devoted very largely to small animals, and I feel sure that you will endorse the decisions of the Provisional Committee to include in this programme a paper on cats. Cats have received, probably, very little attention, and I am quite certain that this paper will be welcomed by everyone. The immediate business of this meeting is a paper on the clinical aspects of diseases of the alimentary tract of the cat, which is to be presented to you by Mr. W. L. Weipers. Mr. Weipers is very well known to us in this country as a clinician of the highest standing: he has that very unusual ability of combining the most acute and careful clinical observations with a very wide knowledge of the literature. How he manages it, with a practice of the size that we know he has, I frankly do not know, but you will appreciate that that is a fact.

Mr. Weipers is now the director of veterinary education in the University of Glasgow, an appointment on which we can but congratulate him. But I am sure that you will feel with me that what is the gain of veterinary education in this country, is, without doubt, a loss to veterinary clinical practice.

You will realise from those few remarks that the paper which is presented by Mr. Weipers will command your attention, and I am sure it will provoke a very lively discussion. Without any further delay I will call on Mr. Weipers.

Introducing his paper, Mr. WEIPERS said: I am in some difficulty in knowing how much detail I should give you of this paper this afternoon. The paper, of course, has been circulated, but if your experience is akin to mine you will have found it extremely difficult, at this Congress, to keep ahead of the papers that keep flowing in. In fact to me it has been a complete impossibility; so I propose to summarise briefly the subject matter of my paper, and I think if I save time here, it will allow us to devote more time to discussion at a later stage.

A great deal of work has been done on the infectious diseases of the cat in the course of the last few years, but as far as I have seen from the literature, there has not been a corresponding increase in clinical observations and articles that pertain to the clinical diseases of the cat.

I concentrated on this particular point in my own paper, which makes it, in some ways, rather disjointed, because in many cases I have given an indication of symptoms and signs, and in some cases no indication at all of treatment.

Now, briefly, I have set out the paper here under various headings, and my first heading is the condition which I have referred to as granuloma of the lip. This has been described as a rodent ulcer. Most of you, who are clinicians, will be aware of the condition as an indolent ulceration of the upper lip, which is characterised by a thickening that might amount to two or three times the normal thickness of the lip. There is a thickened epithelial border, and the condition is extremely difficult to treat.

Some years ago, I think 1944, Miss Patchett wrote in *The Veterinary Record* that 1 per cent. gentian violet was useful in this condition, and since I started using this I have had only one case that has failed to respond to treatment. This is merely applied, and the results, I must say, are remarkable.

The condition at one time was considered to be in the nature of a neoplasm, but I am satisfied from the results of this treatment, the results of observations of microscopical sections of this condition, and from the fact that one often finds a fairly innocuous secondary lesion in the inside of the flank (probably spread by licking) that the condition is an inflammatory one. We have, on occasions, found staphylococci present in the wound, and occasionally structures like cell nests. But these latter, I think, are probably after-effects, and cannot be considered to be neoplastic.

Next I will deal with a small section on buccal lesions. To summarize, I would say that the characteristic feature of such lesions in the cat is that any abnormality in the gums or in the cheeks, or loose teeth, will cause the cat to scratch frantically at the mouth. It is the sort of condition one sees when a fishbone is lodged between the teeth. These efforts may or may not be successful; in many cases they aggravate the original condition and one has to take measures, such as an Elizabethan collar, to protect the animal and prevent it from doing further damage.

Ulceration is quite a common condition in the cat's tongue, but again, any lesion here is characterised by the complete absence of any attempt on the cat's part to scratch at the mouth or dislodge the foreign body. It causes difficulty in prehension; signs resemble those present in a condition which I refer to as ulcerative glossitis. I will deal with that later under the heading of infectious diseases.

Ranula, in my experience with cats, has almost always been, not what is often described as a blockage of Wharton's duct, but a blockage of one of the small mucous ducts, and

usually responds quite well to treatment—complete excision. I have occasionally seen a granulomatous condition in the intermaxillary space which responds very well to penicillin—in some cases probably actinomycosis infection.

I will deal briefly with foreign bodies in the cat. Foreign bodies in the cat usually lodge in the throat; it is not nearly so common to find them in the oesophagus as with dogs. Signs of oesophageal obstruction in the cat usually arise from neoplasm, an epithelioma of a peculiar nature which I think, within my limited experience, occurs only in cats. The onset of symptoms is slow. The animal shows difficulty in retaining solid food, and as time goes on finds it increasingly difficult to retain anything. The condition can be diagnosed by the passage of a probang down the oesophagus, or by the administration of barium cream, and examination under X-ray, when there is a characteristic hour-glass appearance.

Next, "hair-ball" in cats. I have indicated that in my experience this condition has not been very satisfactorily dealt with in veterinary literature. I think it is perfectly normal for cats to bring up pellets of fur; it is only when they cease to do so that the condition becomes pathological. The fur accumulates until there is an aggregation of hair in the stomach as large as a man's fist. It is easily diagnosed; the animal loses weight, and the history is a great help in these cases. The cat is anxious to partake of food, and addresses itself to the food with great gusto, but suddenly loses its appetite, only to develop a hunger again within as short a period as an hour. This condition is easily relieved by surgical treatment; the animal is a very good patient for gastrotomy: even a large incision heals very well. A surprising feature is the short period that will elapse before the animal develops this condition again. I have seen it in as short a period as three months: it seems incredible but I have known two cases where this happened. I have had to operate on cats on a second occasion within as short a period as six months. One of the essential instructions to the owners is to take steps to prevent recurrence. To do that I have tried various measures, but on one occasion where I feared that the cat would develop the trouble again, I found, several years later, that the animal was completely cured. This was effected by the introduction of a second cat into the house. He carried out all the cleaning for his neighbour—licking the hair away and managing to disgorge it without any difficulty.

There is a short section in my paper on stenosis of the pylorus in cats. I do not know how common this condition is, I have very few recorded cases. The history is comparable to what we find in dogs. The animal partakes of food, keeps it down for a long time, and is sick, perhaps several hours later, as long as eight, ten or twelve hours, the vomit consisting of undigested food. The diagnosis of this condition is easily confirmed by the administration of barium cream, which in the normal cat will start to pass into the small intestine in about five minutes. In these cases one finds that the barium will be retained in the stomach as long as three, four or five hours afterwards. I have practised, in one or two cases, a modification of the Rammstedt operation. This operation is performed in a comparable condition in children. I understand that it is very successful in human medicine. I tried it in one or two cases with quite good results and since my paper was published I have used it again with very good results. The operation is very simple. I make an incision exposing the stomach, cut longitudinally into the muscle at the pylorus on each side of the greater curvature; adequate measures are then taken to ensure that the mucous membrane is not incised: it should bulge into the wound. Improvement is rapid; the patient is often ready for food whenever it recovers from the anaesthetic.

I will discuss very briefly the infectious diseases of the cat. I frequently, in the early stages of an epidemic of infectious enteritis, find cases of ulcerative glossitis. The lesion on the tongue in this disease is characteristic and is probably known to you all. When I published my paper I was rather at a loss to know whether this was indeed a distinct clinical entity. I had some evidence which suggested that the two were probably associated, if not in fact identical.

In this country, until Jennings published his article last year, many of us suspected that our infectious enteritis was identical with what the Americans describe as agranulocytosis or leucopoenia, but we had no definite published proof until Jennings' article appeared this spring in *The Veterinary Record*. Workers at the Glasgow College had found this to be so in a fairly large series. Quite a number of cases of ulcerative glossitis had a particularly low white cell count and while a very small series cannot have great statistical significance, it was felt that the low average of 5,000 white cells suggested at least a close relationship. Since then we have demonstrated ulceration of the tongue in several other catarrhal cat diseases but such cases do not run a typical course.

The clinical signs of this condition are difficulty in prehension when the animal tries to eat; the patient is reasonably bright and has a fever of about 104° or 105° for about 24 hours. It does not markedly lose weight and the condition does not rapidly develop into the severe fatal syndrome which is usually considered characteristic of infectious enteritis. Recovery usually takes place in a few days and the temperature drops after 24 hours; the animal is interested in food—unlike an enteritis case—and addresses itself to the food but finds difficulty in eating and lapping.

When I find these lesions in the mouth in an uncomplicated case of this condition, I almost always give a good prognosis—much better than I would expect if I had a case, for instance, that had no mouth lesion, and also showing the early symptoms of high fever and sickness that one normally associates with infectious enteritis.

We get very severe outbreaks of infectious enteritis in my district in the centre of Scotland. The mortality in some places is up to 90 per cent., and until the introduction of sulpha drugs and penicillin we could do little or nothing to alleviate the condition. We were probably a bit tardy in introducing these drugs because of the fact that it had been established that this disease was indeed due to a virus and one would not expect any benefit whatever from either the sulpha drugs or penicillin. However, when tried, the unexpected occurred: many cases recovered as a result of the administration of sulphapyridine or penicillin. A daily injection of a fairly large quantity—anything up to a quarter of a million units—continued over a period of three or four days, if it is administered sufficiently early, will often reduce mortality to about 5 per cent.

Now this result seems to me rather difficult to explain, but I think the explanation possibly lies in the fact that Dalling, in carrying out his early investigations in infectious enteritis, discovered the presence of beta-haemolytic streptococci, and he found that the injection of filtrate—presumably pure virus—from infected cats produced a comparatively mild disease in cats. The injection of a filtrate plus a live culture prepared from beta-haemolytic streptococci isolated from a previous case was capable of producing the characteristic fatal syndrome that we associate with this condition.

It looked as if it was necessary to have a symbiosis of the virus and the streptococcus to produce the characteristic and naturally occurring disease.

The next condition I deal with is cat influenza, or dis-

temper. This has a characteristic syndrome. All of us who have boarded cats know the usual chain of symptoms. One morning one hears a cat snuffling—there is a slight watery discharge from the eye and a very fruity sneeze. Then within 36 hours, the condition has spread throughout the entire cattery and an outbreak of snuffles is established. It does not have nearly as high a mortality as infectious enteritis and most cases will recover. Occasionally one finds it associated with a catarrhal condition of the bowels, but the condition is more like human 'flu and usually affects the respiratory tract, and many cases recover without treatment. I think penicillin is probably quite helpful but it is not by any means a specific.

I will conclude with the small section dealing with alimentary tuberculosis in cats. This condition at one time frequently occurred in my part of the country; without giving percentage figures I might say that on an average in my own practice we had anything from six to eight cases every year. In the last two years I have seen only two cases, and one of these cases came from a suburb of the city where the milk may not have been pasteurised. I think there is probably a distinct correlation between these figures and the fact that during the last two years, practically all the milk coming into the city has been pasteurised. It has been proved that practically every case of naturally occurring tuberculosis in cats is of bovine origin. It was interesting to hear J. N. Ritchie, in a paper to the International Congress, state that in the human population from the same area, the percentage of surgical tuberculosis in children had dropped, not quite so significantly, but it was in a proportion that did not differ very markedly from this particular figure that I have given you to-day.

In the early stage and even in some late cases, tuberculosis in cats is very difficult to diagnose. I do not think there is a characteristic syndrome. Very often one can palpate the enlarged mesenteric glands. But again in some cases it is impossible to get anything definite from clinical examination. In such cases, if I suspect the condition is present, I try and draw off some peritoneal fluid or, if there is any indication of clinical infection of the lungs, I draw off pleural fluid for microscopical examination. It has been my experience that the organism is very easily demonstrated in pleural fluid, but it is very difficult to find microscopically in peritoneal fluid. I usually put the case to the owner even if the examination has been negative, if I still suspect tuberculosis from clinical signs, that this may be a serious condition. I advise an exploratory operation, with full permission to destroy the animal if one discovers a tuberculous condition. Occasionally one meets the owner who will not consent to this; in such a case, because of the danger to humans, I wash my hands of the case completely.

I have not dealt entirely with my paper but I have occupied quite a lot of the time. If those of you who have the paper care to raise any points I will be very pleased to discuss them with you in my reply.

Mr. Weipers' paper was as follows:—

Clinical Aspects of Diseases of the Alimentary Tract of the Cat *

In recent years there has been a good deal of research into the infectious diseases of the cat, but the Provisional Committee felt that clinical aspects of feline diseases had received less attention and would be a suitable subject for presentation to this Congress. I have selected for my paper the diseases of the alimentary tract, with particular emphasis on diagnosis. The cat has been aptly described as a complete introvert; in disease it shows few positive clinical signs and can be so temperamental that examination and diagnosis often are very difficult. Fortunately, if the owner's observation matches his interest a very useful history can be extracted and, while this is no substitute for clinical examination, it is an excellent preliminary to examination and is a great time-saver. I propose dealing with the diseases of the alimentary tract on a regional basis and wherever possible stressing pathognomic symptoms and differential diagnosis.

Granuloma of the Lip, frequently referred to as a "Rodent Ulcer".—The condition is an indolent ulcer with thickened epithelial border. Microscopical examination reveals an inflammatory reaction, some increase in fibrous tissue and small cell infiltration. Occasionally, invaginations of the mucous membrane appear on the section and give the appearance of cellnests on cross-section. Professor J. R. Emslie, of the Pathology Department of the Glasgow Veterinary College, has examined a fairly large number of what I considered to be typical cases over a period of fifteen years and in no case was a rodent ulcer demonstrated. All lesions were inflammatory, staphylococci were present in several cases and in one case a pure culture of staphylococci was prepared from the lesion. I think the condition is probably infectious, as several cases occur in the same district and the condition might not reappear for a long time. The cat occasionally causes (presumably by licking) a comparable ulcer in the thin skin inside his flanks and sometimes in the popliteal region. The mouth lesion at first causes no inconvenience and only when it becomes very advanced is there any difficulty with prehension. At one time I performed a radical surgical operation for the cure of this condition and even advanced cases showed no constitutional disturbance, the only post-operative effects being a sardonic grin and and difficulty in retaining saliva. Since Miss Patchett's letter in *The Veterinary Record* in 1944 reported that gentian violet, one per cent., was specific for this condition I have had only one failure and that in spite of protracted treatment by local application and injection of the dye.

Buccal lesions.—Any fairly recent lesions inside the cat's cheeks, such as wounds (with or without embedded foreign bodies), loose teeth, cause the cat to scrape frantically and viciously, but apparently without any preconceived plan, sometimes inflicting quite deep wounds. Acute gingivitis causes the same symptoms. In the case of a fishbone or a loose tooth, these efforts sometimes relieve the condition, but more often aggravate it and treatment includes mechanical protection, such as the application of an Elizabethan collar. In most cases where it is necessary to examine a cat's mouth thoroughly, a quick-acting anaesthetic should be given and this procedure is absolutely necessary for complete examination of the throat. The tongue is drawn forward with forceps and a small retractor is used to draw forward the long soft palate and expose the fauces. It is a simple procedure in such an animal to remove a foreign body if found. The throat is the usual site for the lodgment of fishbones, needles and fish-hooks. To facilitate removal of these latter it is often useful to cut in two with metal shears prior to extraction. When foreign bodies are lodged in the tongue or lesions are present there the cat makes

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no attempt to claw at the mouth, nor does it when the foreign body becomes lodged in the throat. In the former case it will show difficulty in lapping, it may attempt to eat gingerly and with some limited success and after a day or two there may be an excess of saliva. Where a foreign body becomes lodged in the throat, no attempt is made to eat at first but after a few days as hunger increases the cat may show interest in food, sit over it, lick it occasionally, take a little into its mouth and promptly drop it, retiring in disgust. Young cats frequently show these typical tongue symptoms in ulcerative glossitis. I will discuss this later under infectious diseases. Old cats frequently have an accumulation of tartar, sometimes exceeding the width of the tooth by two or three times, on the outer aspect of the molar teeth. This in time causes a buccal ulceration with the usual signs. Dental fistula occasionally occurs in the cat. The owner, if observant, may have noticed evidence of toothache before the abscess on the face bursts but usually he relates the abscess to some previous fight. On examination, the tooth may have caries but I do not think that this condition is analogous to caries in man. The disease probably starts in the pulp cavity: infection travels up the root to the apex and advances downwards to the junction of the alveolus and the gum margin and outwards through the maxillary sinus or misses this and opens on the face where the pus discharges. If by any chance it discharges at the gum margin no dental fistula is formed. The caries is a late development, sometimes destroying a whole tooth. The fistula will not heal unless the entire tooth including the offending root is removed and to ensure this I usually remove the external plate of bone after incising the gum above the tooth. Parodontal disease is fairly common in cats past middle age and is a frequent cause of lack of appetite and loss of weight. Such cases usually do not indicate local pain by clawing. Removal of the affected teeth is the only cure for advanced cases and the improvement is spectacular.

Ranula.—Occurs in the cat and responds to complete surgical removal. It gives rise to the symptoms of difficulty in prehension, salivation and, finally, complete inappetence. It has been described as retention cyst associated with stoppage of Wharton's duct but most of my cases are associated with retention cyst of small mucous glands; the main gland is intact. Local pyogenic infections give rise to buccal lesions associated with difficulty in eating. Occasionally, one finds cases of granuloma of the intermaxillary space associated with actinomycosis, or other infection.

No. 3.—*Foreign body lodged in the throat.*—Usually fish vertebræ, fins, rabbit vertebræ or mandible. At first the cat is dull, is not interested in food or milk, gulps occasionally, is restless and resents external pressure on the throat. Even gentle handling of the throat may induce gulping or retching movements. After a few days the animal may become interested in food and may even swallow milk or water, but solid food, if taken, is dropped out of the mouth. Occasionally, if the foreign body is a needle, it passes through the wall of the pharynx to the cervical tissue and symptoms diminish or disappear for some days but an abscess usually develops. A useful pointer to the presence of a needle is the puncture mark one frequently finds on the soft palate. If an abscess forms the contents are blood-tinged, show evidence of breakdown of tissue and have an offensive smell. In fact, wherever one opens an abscess of this nature in the neck great care should be taken to explore for the possible presence of a foreign body. Sometimes a needle passes into the lumen of the œsophagus. Fortunately, most needles are threaded when swallowed: the cat becomes involved with the thread first and the movements of the tongue with the conformation of the papillæ feed the foreign body into the throat. If normal examination fails to reveal the suspected foreign body I always pass a human stomach tube and when this is retracted the thread frequently is adherent with sticky mucus. I have so far not mentioned X-ray but this is of course invaluable in locating foreign bodies and constrictions.

No. 4.—*Neoplasm of the Oesophagus.*—This condition is relatively common in the cat and is responsible for most cases of obstruction in the œsophagus in this animal. Foreign bodies at this site are relatively less common than in dogs. The tumour is usually a ring carcinoma which shows a tendency to keratinisation but occasionally one finds a sessile adenoma. Symptoms, as one would expect, are gradual in onset. There is usually some loss of condition and some gradual deterioration in the animal's appetite. The owner may or may not notice that the animal shows a preference for soft foods. It can certainly deal with this type of food much better, as large particles of food invariably induce vomition shortly after ingestion, occasionally preceded by discomfort and retching movements. When this history is given a tumour should be suspected and confirmatory tests applied. These are, light anaesthesia and passage of a sound or small human stomach tube or X-ray with barium. The former is satisfactory in locating the obstruction which is usually in the upper third of the œsophagus or inside the entrance to the chest, but it does not disclose its nature. The administration of small quantities of barium sulphate cream by stomach tube and examination with X-ray a little later when the cream has been allowed to gravitate downward reveals an hour-glass shadow which is characteristic. A child-size œsophagoscope also is useful and the characteristic papilliform surface becomes obvious. If it transpires that there is a foreign body in the œsophagus—for instance, a fishbone containing so little calcium that it is not X-ray opaque—then the barium wash emphasises the outline of the bone and makes it obvious.

No. 5.—*Hair-ball in cats.*—Probably no subject has been so inadequately covered in veterinary literature as hair-ball. I consider that it is as normal for a cat to vomit up pellets of fur as it is for predatory birds to bring up fur, bones, etc. In some cases pellets are passed in the fæces but I consider this method of disposal normal and not an indication of disease. The backward-pointing papillæ on the cat's tongue appear to be highly specialised adaptions for swallowing hair. The condition only becomes pathological when the cat fails to vomit the hair and it accumulates in the stomach. In quite a short period a complete cast of the stomach is formed and this is obvious by palpation as a firm swelling of putty-like consistency. In this case the history is again very helpful in suggesting the presence of the condition. The animal frequently asks for food, addresses itself with great gusto but rapidly becomes satisfied, though only for a period of an hour or two when the process is repeated. There is occasionally a hunger sickness, a little fluid in the morning. Usually the cat's general condition is poor, but if surgical measures are taken at a reasonably early stage recovery is the rule. The fairly large incision in the stomach necessary to remove the foreign body heals without any complication in most

cases. The most important after-treatment is to institute some measure which mechanically will prevent a recurrence of the condition. These include daily combing with a steel comb, particularly during the casting season, and, if necessary, removal of the loose hair under anaesthesia in the spring and the autumn. I have twice had to re-operate on cats within three months of the first operation because no adequate steps were taken to prevent a recurrence. One of these owes its immunity to further trouble to the introduction into the house of a second cat which carries out a daily cleaning of its coat!

No. 6.—*Stenosis of the pylorus.*—This is a comparatively rare condition in cats. I have seen on an average about one or two cases per annum and usually if medicinal treatment failed to alleviate the condition I advised destruction. Two years ago I had a typical case which, after some initial response to treatment, gradually deteriorated and was incapable of retaining sufficient food to maintain weight. My assistant, Mr. T. E. Groves, suggested it would be worth trying the operation practised in children with this condition. I carried out a modification of Rammstedt's operation. I incised the swelling at the pylorus along its long axis a short distance on each side of the greater curvature, about three-eighths of an inch long, and with a blunt dissector tore apart the muscle fibres until the mucous membrane could be seen bulging into the wound. This case was singularly successful. Only once have I had an opportunity of operating since and so far this also promises to be successful. The history in these cases is frequent sickness occurring over a long period, 8-12 hours after food. The food is little altered, undigested, slightly sour. The vomiting is characteristic. It is frequently of a projectile nature and the cat may run about frantically. The condition develops when the animal is from three to four years old, and I have not seen congenital cases. The type of sickness is similar to that occurring in the greedy cat which gorges and instantly regurgitates with the same abandon, but of course much sooner after food. Confirmation of pyloric stenosis can be obtained by the administration of a barium meal and X-ray. In a normal cat the cream begins to enter the duodenum in less than five minutes. In these pyloric cases it may take as long as several hours. I have no knowledge as to whether this type of operation is likely to be successful in most cases of pyloric stenosis in the cat or whether in my present cases the result is likely to be permanent, further than saying that at the moment the condition has been greatly alleviated.

No. 7.—*Infectious diseases of the cat.*—I think at this stage it would be quite useful to discuss briefly the clinical aspects of the commoner infectious diseases of the cat (Ulcerative glossitis, infectious enteritis or agranulocytosis, and distemper or influenza).

(*a*) Ulcerative glossitis: This is a fairly definite clinical entity. At one time I thought it was a disease distinct from infectious enteritis (agranulocytosis) but I have some evidence to suggest that it is related ætiologically to the latter disease. The illness is ushered in with high temperature, sickness, inappetence and might at this stage lead one to suspect the onset of infectious enteritis (agranulocytosis). There is some salivation, but the marked depression and painful abdomen are absent. The anterior part of the tongue is covered with apthous lesions and after a few days there is a superficial necrosis with ulceration. There may be some confluence of the ulcers and the anterior part of the tongue looks red and painful. Within a day or two the animal is seeking food and only the difficulty in prehension prevents it taking solids; it is soon able to take milk. Temperature rapidly becomes normal without treatment but sulphonamides or penicillin appear to expedite recovery. I have seen this syndrome in the first cases of what ultimately proved to be an outbreak of infectious enteritis (agranulocytosis) in a large cattery and these cases proved to be solidly immune to the more serious disease. With a view to clarifying the nature of this disease Lauder and Campbell have carried out a series of examinations, including blood tests, and, by the standard accepted by Jennings as indicating the presence of this disease, the blood picture showed marked leucopoenia. In one typical case the white cells were as low as 4,200 and the average of five was 10,000 compared with normal of 15,000. It may be that this disease is caused by the virus unaccompanied by the normally associated pathogens and resembles the comparatively mild experimental disease set up by Dalling and by Hindle and Findlay, using filtered material. (If this is so then the benefit which follows sulphonamide treatment may be more apparent than real). Further examination of samples will give a more significant picture. It is sufficient to say that most cases of this glossitis recover with or without treatment and even in an early case I give a better prognosis if I find typical mouth lesions than I would do otherwise.

(*b*) Infectious enteritis: This is the most serious killing disease in cats and has become of considerable economic significance as in many parts of the country it is found impossible to keep cats and there is an enormous increase in rats and mice. The disease starts with a high fever, extreme prostration, loss of weight, sickness (the vomit often contains ascarids, and leads the owner to believe these to be the cause of the trouble). There is little salivation but usually a slight moistness under the chin. The animal does not rest curled up but maintains a characteristic crouching position, preferring to lie in cold places. Vomiting is preceded by evidence of pain and is often induced by palpation of the abdomen. Mortality is about 80 per cent. Respiratory symptoms are completely absent, also ocular discharge. While it was suspected that this condition was identical with what is described in U.S.A. as agranulocytosis, the first published confirmation that I can find in British literature was Jennings' early this year, although several practitioners had ascertained that the diseases were indeed identical. As the disease progresses the animal rapidly becomes weaker, cannot swallow, cannot sleep, pain increases and often death occurs after painful sickness. An interesting feature is that few cases show any signs of diarrhœa, in fact, any bowel movement whatever, during the entire illness. The cat will overcome its instinctive dislike to seek some cool place and will even lie in water. Contrary to what one might expect with a virus disease, I have found penicillin and even sulphonamides very helpful in this condition, in some outbreaks reducing the mortality to 5 per cent. In 1934 Dalling reported some interesting transmission experiments with this virus. Natural exposure or the injection of infected material (which, in addition to virus, contained beta-hæmolytic streptococci) into susceptible kittens caused the typical rapidly fatal disease, but when filtrate, which presumably contained only pure virus, was used, a milder disease ensued though a solid immunity was established. When virus was used and cultures (which had been prepared from affected cats) of beta-hæmolytic streptococci were injected simultaneously the fatal disease occurred. Dalling later reported that injection of filtrate alone produced the typical disease, presumably the rapidly fatal one. It may

be that the penicillin acts by destroying the associated hæmolytic streptococci and permits of the establishment of the milder disease. It may also be that the ulcerative glossitis condition is due to uncomplicated virus.

(*c*) Cat influenza, or cat distemper: Clinically this disease resembles distemper in dogs but immunologically is much more like influenza in humans—immunity is transient and a cat may be attacked twice or, exceptionally, three times in one year.

Infectious enteritis, on the other hand, is clinically a disease of the digestive tract but immunologically resembles dog distemper—one attack conferring a lifelong immunity.

I think in ny groaup of, say, half a dozen cats it is unlikely that one is not carrying the virus of this disease which under normal circumstances will not give rise to clinical signs, but in confinement and in the conditions prevailing in most inside boarding catteries the virus will set up the typical symptoms of influenza and initiate an outbreak which rapidly spreads from cat to cat. The first sign is a resounding moist sneeze, clear droplets being distributed over a wide area. There is frequently, in the early stage, a unilateral conjunctivitis, but soon all the symptoms of a common cold develop, sometimes complicated by pharyngitis, broncho-pneumonia and epistaxis, while in some outbreaks a regular feature is catarrhal enteritis with frequent passage of offensive loose movements occasionally mixed with gas and blood.

While I have described the signs present in a typical outbreak of these diseases I do not always find such a clear-cut picture. In outbreaks, particularly in farm cats, one appears to get a combination of symptoms of influenza and enteritis and it may be that in these cases both viruses are present. In any case I treat such outbreaks with the sulphonamides or penicillin, with distinctly beneficial results.

With regard to the mouth lesions described in ulcerative glossitis, I have again probably oversimplified the case as mouth lesions may be present in any of these diseases but are relatively uncommon.

No. 7.—*Worms.*—Hunting cats frequently carry a heavy infestation of tape and round worms, but even in these circumstances often maintain very good health. It may be that their prey, while being the source of the trouble, also reduce infection as the passage of hair, feathers, etc., through the alimentary tract appears in certain circumstances to clear the tract of worms mechanically. I consider a pathogenic symptom of worms or gastric irritation to be an infrequently repeated dry cough. The animal adopts a crouching position, stretches out its head and gives a series of dry coughs. Diagnosis is confirmed by microscopical examination of the fæces.

No. 8.—*Alimentary tuberculosis.*—Griffith found that cats did not succumb naturally to human tuberculosis. All his cases were bovine and showed evidence of alimentary infection. Dobson and others found at *post-mortem* examination that about two per cent. of cats had tuberculosis and again only isolated bovine strains. This was quite a common disease in city cats but in my district has become very rare. I attribute the reduction to the fact that the city's milk supply is now almost all pasteurised. I have seen only two cases during the last two years and one of these was in one of the outer suburbs of the city where it is quite possible the milk came from a non-pasteurised source. Previously, I would average about six cases of alimentary tuberculosis in cats annually. Abdominal tuberculosis in cats leads to a gradual loss of weight, increasing dullness and usually diarrhœa. In some cases there are no obvious signs until the enlarged mesenteric glands begin to press on the lumen of the bowel or to cause some interference with its blood supply. In some cases there are multiple lesions in the liver and, depending on their distribution, either the ascitic or the icteric syndrome develops. In the latter case the bowel movements are putty-grey and offensive. If the condition is advanced the lungs and pleura are sure to be affected and percussion readily reveals dull areas. Microscopic examination will confirm diagnosis by demonstrating acid fasts in samples of fæces, or fluid removed from peritoneal or pleural cavity. If skin lesions are present acid fasts are easily demonstrated therefrom, also from pleural fluid, but I have found it much more difficult to demonstrate acid fasts from peritoneal exudate during life. The eye lesion, if present, is a typical choroiditis and has been well described by Henry Gray. When I suspect this disease to be developing, but microscopical examination has been negative, I conduct an exploratory operation and obtain the owner's previous consent to destruction, as I consider such cases a serious menace to man. Should the owner not consent I refuse to have anything further to do with the case.

No. 9.—*Impaction of the colon.*—This condition frequently occurs in old cats and there may be complete stasis for three or four weeks. An interesting feature here is that after a time the cat makes little or no attempt to defæcate and I attach some importance to this in differential diagnosis. For example, in urethral obstruction the cat makes frequent attempts to expel something from the abdomen, cries out in pain, turns and spits at his own nether extremity and resents having the hindquarters touched. The owner, when presenting the animal, usually vouchsafes the opinion that the cat is suffering from constipation. In impaction of the colon, on the other hand, there is no pain in handling the hindquarters. The animal makes little attempt to defæcate, there is general dullness, appetite is impaired—although I have known it continue fairly good for as long as three weeks. The firm mass is easily palpable through the abdominal wall and can almost be brought down to the floor of the abdomen. The impaction may become enormous and consist of discrete masses of dark fæces reinforced with hair. The masses are up to two inches long, sometimes three-quarters of an inch in diameter, and stretch out at intervals along the colon. Administration of liquid paraffin fails to relieve the constipation as it merely seeps past the obstruction, and I find that digital removal, under light ether oxygen anæsthesia following previous copious lubrication, while tedious, is the most satisfactory remedy. At one time I used bowel lavage, applying sufficient pressure to relax the iliocæcal valve and flush the fæces into the stomach; in due course the stomach contents were vomited but as this method was followed by extreme nausea I discarded it in favour of the above treatment.

No. 10.—*Diarrhoea in young kittens.*—This condition is fairly common in kittens from two to four months old. General health appears to be fairly good but bowel movements are liquid, frequent, and have a large mucus content.

Severe cases cause soiling of the tail and the flanks and set up an eczema which gives rise to a very offensive odour. Blood is not usually present. The cat surveys its hindquarters, may start to clean them, but desists from the task with obvious disgust, walks away stiffly and shakes its legs in a futile attempt to rid itself of the smell. Some cases make a complete recovery with treatment such as bismuth and thallylsulphathiazole. Microscopic examination of the

fæces fails to reveal coccidia or mass infestation with worms. I have not been able to discover the cause but the condition is not markedly infectious as only one member of the litter may show signs. Many cases would recover, but the difficulty of house-training in these cases taxes the patience of all but the most patient owners. In my district I do not find any clinical coccidiosis in either dogs or cats but I understand this disease gives rise to a diarrhœa which Hamilton Kirk describes as resembling strawberries crushed in cream. In 1925 Martin described coccidiosis in kittens one to four months old as non-febrile, desquamating enteritis characterised by severe tenacious diarrhœa with much mucus—sometimes hæmorrhagic—associated with anæmia and loss of weight. Death occurs in from two to four weeks.

No. 11.—*Diarrhœa in old cats.*—This condition is frequently due to colitis but many other causes are responsible for its presence. Colitis in cats tends to run a chronic course at first. The bowel movements are not very frequent, smell offensively and the patient loses weight in spite of fairly good appetite. There is an excess of mucus and the movements are fairly often streaked with blood. The cat is frequently thirsty, preferring water to milk. The administration of kaolin and finely divided bismuth brings about considerable improvement. Treatment should be continued over a long period otherwise relapse is apt to occur. Sulphonamides are of little value. Abnormalities of the liver are responsible for diarrhœa in many cases and several distinct types are found. Any interference with the flow of bile, *e.g.*, multiple tuberculosis lesions, or enlargement of the glands near the bile duct or any toxic substances destroying liver cells, can give rise to diarrhœa with the passage of putty-like foetid liquid stools. Some years ago phosphorus pastes were much in vogue for the destruction of rats and mice and often caused poisoning in cats with the production of jaundice. Such cases are now rarely seen as phophorus as such is seldom used for rat baits. Most of my cases of jaundice now are associated with tuberculosis or neoplasms. I have never seen leptospirosis in cats, although Watkins reports one suspected case associated with an outbreak of the disease in silver foxes. One would certainly expect to find the condition in cats because of the frequent occurrence of the causal organism in their natural prey.

No.12.—*I frequently find the following syndrome in cats and have associated it with liver malfunction.*—There is a history of chronic illnes and gradual loss of weight associated with a poor appetite and in some cases enlargement of the liver. The cat appears to be mildly interested in food, may sit over it and walk away without touching it. The owner often suspects bad teeth but if one anæsthetises the patient and finds nothing in the mouth or throat which would account satisfactorily for the lack of appetite, then it is absolutely necessary in such a case to give a bad prognosis as the condition is often associated with liver enlargement and the ultimate chance of recovery poor, while the administration of the anæsthetic appears to accelerate the illness. Wasting is progressive, the animal is very dull and for some time there is an absence of sickness and diarrhœa. In time all the body fat becomes used up and the cat becomes hollow-eyed and gaunt and in some cases develops ascites. The visible mucous membranes are very pale. Towards the end of the illness the animal occasionally shows sickness and some abdominal pain.

No. 13.—*Intussusception and Prolapse of the Bowel.*—I find these conditions much less common than in the dog, but Schneile reports the contrary with regard to intussusception. The swelling can readily be palpated as most patients are kittens suffering from bowel catarrh and the abdomen is very empty. Prognosis depends on the severity of the original cause and the duration of the intussusception. In older cats prolapse of the rectum associated with intussusception is much commoner and may follow excessive purging, associated with the passage of blood. At first the prolapse does not cause much discomfort but straining continues, the condition becomes aggravated and extensive damage may be done to the mucous membrane by trauma. When once the prolapse occurs the usual characteristic mucus-cum-blood smell becomes obvious. It is comparatively easy to return the prolapse under anæsthesia even when it is quite extensive and it is unusual for strangulation to take place. When the bowel is returned I inject absolute alcohol alongside the rectum and insert a purse string suture round the anus, partly restricting the opening. Many patients are apparently normal for about a week or longer and even at that date a recurrence is not unusual and the percentage ultimately cured is quite small. In recurring cases rectopexy should be performed.

I have never seen a cat with disease of the anal glands and they do not seem to be susceptible to the anal adenoma so common in old dogs.

Signs, Syndromes and Histories.—I conclude with a short section on the various signs, syndromes and histories usually associated with disease of the alimentary tract.

No. 1. Scraping viciously at the side of the mouth: This usually indicates pain in the gums or the inside of the cheeks. It may be caused by foreign bodies inside the cheeks or between the teeth, sometimes by a displaced loose tooth. Acute gingivitis is also responsible for this sign. Some authors describe the occurrence of Vincent's angina in cats but I have never recognised this condition.

No. 2. Difficulty in prehension (lapping or picking up food): This occurs when there is any foreign body in the tongue, in ulcerative glossitis, in the marginal ulceration which sometimes occurs in the tongue, in feline influenza. It also follows burning and is also present in fractured lower jaws. This symptom also occurs when ranula is present.

No. 3. Desiring food, attempting to pick it up: This occurs when the above conditions have passed the acute stage, *e.g.*, in ulcerative glossitis and ranula.

No. 4. Sitting over food and making no attempt to eat or lap: Infectious enteritis (agranulocytosis). Foreign body in the throat, especially during the first few days.

No. 5. Difficulty in eating solids and regurgitation of liquids from nose: this occurs in split palate—a frequent sequel to a cat falling from a great height (40—60 feet).

No. 6. Vomiting: Enteritis, pyloric stenosis, hair-ball, overgorging, pleurisy, early stages of ulcerative stomatitis, carcinoma, and foreign body in oesophagus.

No. 7. Sitting in cold water and preferring cold places such as linoleum to carpets or warm places: Infectious enteritis.

No. 8. Frequently recurring hunger, easily satisfied and quickly returning: Hair-ball.

No. 9. Diarrhœa: Colitis, bowel catarrh, coccidiosis, tuberculosis.

No. 10. Absence of or limited attempts at defæcation: Infectious enteritis. Paradoxically, constipation, when established for some time.

No. 11. Frequent straining attempts to expel something from the abdomen: Urethral obstruction, parturition.

No. 12. Pain and palpation of the abdomen: Infectious enteritis, and retention of urine, superficial abscesses.

No. 13. Coughing in the absence of respiratory symptom: Worms.

In conclusion, I would like to thank the Committee for their invitation to present this paper and hope it will provoke a discussion which will cover the blanks therein, of which I am very conscious.

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Discussion

Miss M. J. Freak, M.R.C.V.S. (Potter's Bar), President of the Society of Women Veterinary Surgeons, who was the first opener of the discussion, said: I am deeply conscious of the privilege of having the first opportunity to congratulate Mr. Weipers upon his admirable clinical paper and to open the discussion upon it. Such a paper will be a stimulus and help to those of us in small-animal practice to whom the domestic cat is becoming an object of increasing interest and concern. It is most appropriate that after a congress in which the food supply of mankind has been the focal point, we should now turn to the diseases of one of the main guardians of that food supply from depredations by rats and mice.

In my remarks I shall endeavour to adhere to the regional classification used by Mr. Weipers and comment on, and where possible, add to it point by point.

Firstly, granuloma of the lip. Prior to Miss Patchett's report on the use of gentian violet I had obtained a fair percentage of success with very thorough silver nitrate cautery under general anaesthesia, and even now in the resistant case consider the stimulus of cautery followed by gentian violet, will often accelerate healing.

A disadvantage I have encountered in a number of cats while using 1 per cent. gentian violet, however, is its tendency to cause excessive salivation when licked. In these cases the animal has appeared uncomfortable, has refused food and has sat with the head down and a constant thread of saliva reaching from each corner of the mouth. The tongue is reddened at the borders and at first sight the case has appeared similar to an early ulcerative glossitis, except that there is no temperature rise and the condition returns completely to normal upon ceasing to use the gentian violet for 48 hours. This trouble was first encountered where a 1 per cent. gentian violet jelly was being used, the consistency of the preparation leading to a rather thicker application and therefore a greater amount available to licking than in the case of the aqueous solution, but it has since been met with the latter in cases where prolonged treatment has been necessary. In old-standing or severe cases of lip granuloma, therefore, I now adopt the practice of applying treatment for brief periods interspersed with periods where no treatment is applied, and using three-day intervals I have found the results satisfactory.

In discussing buccal lesions I would like to comment on a condition frequently met in cats of about five years and upwards, namely, an ulceration inside the commissures of the lips, frequently extending into the cheek and on to the gum behind the last molars.

The symptoms are those of difficulty of prehension and chewing the food although desire for it may be manifest. There is often a tendency to sit with the jaw slightly dropped and the mouth open as though closure caused pain, and pain is also manifest upon forcible opening of the mouth to any wide extent.

Cases are sporadic, but the condition does appear to be infective and responds, often quite spectacularly, to penicillin.

I have not been able to ascertain the cause and would welcome Mr. Weiper's opinion on the matter.

The throat is probably the point at which the vast majority of foreign bodies lodge and their variety is infinite, but while considering buccal lesions it may be worth drawing attention to the not infrequent occurrence of complete encirclement of the tongue by a tracheal ring where lights are an article of diet, or occasionally by an elastic band.

The frantic clawing of the mouth is very evident in such cases —much more so, in my view, than in the case of the loose tooth where often the only symptom shown is an inability to close the mouth and a chattering of the jaw when attempts are made to do so. In fact, the owner frequently telephones in acute alarm fearing a dislocated jaw.

The action of the tongue papillae in feeding back foreign bodies into the pharynx and not allowing them to return on retching is well illustrated by the occurrence, several times encountered, of a long blade of pampas grass, of the type frequently eaten avidly by cats, lodged longitudinally in the oesophagus with the upper end just visible in the pharynx. In these instances, coughing and retching are almost constant, but the combined effect of the tongue papillae and the hairs present on the grass effectively prevents the ejection of the object.

When dealing with the subject of penetrating foreign bodies near the throat, the tuberculous retropharyngeal or submaxillary abscess and/or sinus is of interest from the viewpoint of differential diagnosis. X-ray will of course confirm the diagnosis of foreign body in most cases—and in the discharge from the tuberculous lesion acid-fast organisms may be found in a smear stained by Ziehl Neelsen. The character of discharge itself is rather typical, that in the case of abscess due to foreign body being foul or metallic smelling and blood-stained while that in the tuberculous lesion is whitish and flocculent.

The importance of rapid diagnosis of the tuberculous lesion from the public health point of view is obvious and although its incidence does appear to be decreasing in cats, until we have got rid of it in the bovine we must be on our guard against both milk-borne infection and that occurring as the result of feeding uncooked knacker's meat.

Carcinoma of the oesophagus is, as Mr. Weipers states, a more common cause of obstruction than foreign bodies although rabbit vertebrae have been encountered at this site on a number of occasions. In most of these cases the foreign body has been relatively easily pushed on down to the stomach with a probe. The sudden onset of symptoms in the foreign body case as opposed to the carcinoma is a useful point in differential diagnosis, as is the age incidence—foreign bodies tending to occur in young animals and carcinoma in those of middle to old age. The perspex coldlite type of endoscope has in my opinion the advantage over X-ray in both cases since it gives a good direct vision of the obstruction, particularly useful if any forceps removal of foreign body is required, and does away with the more cumbersome procedure of the barium meal.

With regard to the occurrence of hair ball, I am in entire agreement with Mr. Weipers as to the complete normality both of the vomiting of small wads of matted hair and to their passage in the faeces and submit that in the short-haired hunting cat ingesting fair amounts of rodent and bird skin and bone, in addition to its own hair, pathological hair ball is an exceedingly rare condition. Its contributory causes appear to be not only the long neglected coat but also increased licking due to external parasites, unsuitable low bulk house feeding and absence of the opportunity to hunt its own game.

Pyloric stenosis I have not yet encountered and I am most interested in Mr. Weipers' operation for its surgical relief.

I am not quite clear what medical treatment he has applied, unless he refers simply to the procedure of feeding little and often on a low bulk diet.

In considering diseases affecting the alimentary canal I feel that pancreatic deficiency needs to be mentioned and I find it a not uncommon occurrence in the middle aged and aged cat.

The sometimes diarrhoeic and always soft bulky greasy faeces with the rancid odour are quite characteristic if observed, although

the habits of the cat are such that the owner rarely sees defaecation unless the cat is trained to a dirt box, and more commonly the disease is not suspected until emaciation (in spite of ravenous appetite) is well advanced.

Mr. Weipers' observation that ulcerative glossitis is related to infectious enteritis coincides with my own experience and even in the acute typical infection enteritis cases I consider that the tongue lip and border commonly, if not invariably, show a reddened, wet appearance.

Ulceration of the tongue following prolonged illness with feline influenza or infectious enteritis should not, I think, be classified with the specific ulcerative glossitis but probably represents a nutritional imbalance or deficiency. Many cases respond well to vitamin C.

The condition classified as impaction of the colon would appear to be aetiologically a stasis or atony of the colonic wall, occurring and recurring in certain cats and usually progressive. The faeces, when removed, although very firm are usually normal in construction and as Mr. Weipers has remarked, the complete absence of straining is a feature of the syndrome.

The water absorbent bulk laxatives of agar agar with the vitamin B group, *e.g.*, Vi Siblin, give a higher rate of improvement in these cases than has been obtained with any other agent and its routine administration will often keep a case clear of recurrence for considerable periods.

In discussing causes of rectal impaction I should like to mention a single case of prostatic enlargement encountered last year.

The subject was an uncastrated male of six years. Straining was fairly marked, a little muco-purulent discharge was seen at the tip of the penis, and palpation revealed a firm doughy mass of faeces in the colon but did not reveal the prostatic lesion as straining occurred on putting any pressure on the abdomen and the enlarged prostate swung back completely within the pelvis.

It was only when a rectal exploration was made under anaesthesia that the cause of the obstruction became obvious.

After relieving the immediate obstruction the cat was castrated and 2 mgm. stilboestrol dipropionate injected in the hope of a similar response to that obtained in the dog. This, however, did not occur and the colon simply refilled. On *post-mortem* examination the lesion, which was about the size of a walnut, was found to contain fluid in a central ½ in. diameter cavity and one section to be composed entirely of undifferentiated fibrous tissue with much collagen and scattered islets of epithelial tissue, probably remnants of ducts.

Finally, I would like to comment on diarrhoea in kittens and cats.

That in kittens of the type described by Mr. Weipers I regard as coccidial in origin and consider the finding of oöcysts in the faeces a rather chancy affair.

Response to sulphamezathine or phthalyl sulphathiazole is fairly good.

In both kittens and older cats, however, there do remain severe, prolonged and occasionally fatal cases of enteritis, possibly blood stained. Temperature is seldom raised more than 2 per cent. and the animal is rather dull; appetite is fair to moderate or in the very severe case may be absent.

It is in such cases I feel that in the future we must investigate the possibility of *Salmonella* infection and in pleading guilty to having neglected this investigation in the past I would emphasise that its public health importance makes diagnosis vital.

The natural association of the cat with the rodents and the keeping of cats on farms and in contact with poultry suggests the likelihood that infection may occur more commonly than has hitherto been suspected.

In closing I would again like to thank Mr. Weipers for his paper and look forward to a valuable discussion.

Miss Christine A. Woods, M.R.C.V.S. (Menston-in-Wharfedale), President of the Yorkshire Division, N.V.M.A., who followed as the second opener of the discussion, said: Before making any remarks on the subject of cat diseases I would like to offer my congratulations to Mr. Weipers on his paper. He has covered the ground with characteristic thoroughness and lucidity. When asked to contribute to the discussion I felt there would be little to add after he and Miss Freak, both such observant clinicians, had said their say, and I still feel this to be true.

However, I would like to start by mentioning one or two poisons. We meet a number of cases of poisoning, the commonest being caused by meta, put down in gardens for the destruction of slugs. When mixed with bran, breadcrumbs or oatmeal it seems particularly attractive to some cats, and symptoms resembling those of strychnine poisoning supervene. As with strychnine, provided the animal is not too far gone when first seen, the administration of nembutal is highly successful. The toxicity of meta is less than that of strychnine, and it appears to be excreted fairly rapidly, so we have not found it necessary to inject nembutal as frequently or over so long a period as in the average strychnine case. It is usually possible to obtain a history of slug-destroyer having been put down in the owner's or neighbours' gardens.

Another comparatively common poisoning is caused by phenol or cresol, and is usually brought about by the cat's licking its feet after walking in crude or strong disinfectant. In one of our cases the owner had used undiluted lysol to clean the cat's ears and produced severe symptoms of poisoning, together with the shelling out of a complete cast of the ear. The smell of disinfectant is a guide to diagnosis, and treatment consists of demulcents and maintenance of body warmth. Greenish diarrhoea and vomiting occur and the animal appears to make no effort to live.

We still get some cases of phosphorus poisoning, but usually see them at the stage of liver involvement, showing jaundice or extreme pallor, subacute vomiting and diarrhoea. There is a frequent history of the cat's having been violently sick three or four days before, and then recovered to some extent before falling off again. Unfortunately the owner very often has administered castor oil at the time of the original sickness which has favoured the absorption of the phosphorus.

The builder's limepit would also appear to be a predilection site for cats, and unless the lime is very rapidly washed off, internal poisoning from licking aggravates the illness due to skin burns.

Mr. Weipers has dealt at some length with hairball and faecal impaction. As regards the latter, it has usually been our experience to find one large mass of faeces and hair, often as much as 5 in. or 6 in. long by 2 in. across, rather than a number of discrete masses. In one neutered male farm cat impaction had been present for a month before our assistance was sought, and yet the cat showed little sign of severe illness or pain, just sluggishness, weakness and considerable loss of flesh. In this case the mass was so enormous and firm that we decided to resort to colotomy rather than prolonged manipulation and removal *via* the anus, and the cat made a good recovery, although it was nearly a month before normal bowel action occurred without stimulation. Vitamin B and Altan were given during this period. Apart from small bones or needles the cat's careful manner of eating does not predispose to such foreign bodies of the stomach and bowels as are a commonplace in dog practice, but we did once remove a rubber stud, as used to fasten bathing caps, from an adult cat's small intestine near the ileo-caecal valve. Presumably this had bounced into the back of her mouth during play.

One is frequently presented with a cat showing typical symptoms of a foreign body in the throat, *i.e.*, sitting with the head poked forward, retching on swallowing, or if the throat is palpated externally, or refusing to eat or drink at all. On passage of the oesophagoscope under general anaesthesia nothing is to be seen but a small patch of inflammation at the entrance to the oesophagus. A history of sudden onset of symptoms while the cat was eating a bone or fish suggests that a scratch or temporary lodgement of a bone may have been responsible for the inflammation, which clears up in the course of a day or two.

We have seen a number of cats, in which the character of Manxness is carried to excess, with resultant incompetence of the anal sphincter. There is little to be done for this, as the nervous elements necessary for control of the sphincter are absent, and we advise destruction, though we meet a number of owners who prefer to keep the cat in that unsatisfactory condition rather than part with it. Some four months ago we were asked to treat a cat with a very deep, cleanly incised wound at the side of the base of the tail, and running forwards parallel to the spine and close to it. Due to severance of the relevant nerve there was relaxation of the anus on the affected side. For a few days swelling of the part facilitated the retention of faeces, but as healing advanced leakage occurred and persisted for some weeks after healing of

the wound was complete. The owner, though fond of the cat, rather excusably began to talk of having it destroyed, but the prognosis seemed relatively good, and spontaneous recovery has in fact now taken place.

Both tapeworms and roundworms may be vomited by cats, particularly after a change of diet, as we find when we take cats in for board or hospital treatment. More often than not, the whole infestation is expelled in this way, administrations of vermifuges producing no more worms. For tapeworm infestation we use arecoline acetarsol with very variable results. The effective but non-toxic dose varies immensely from cat to cat, but, generally speaking, we find the dose suggested by the makers quite inadequate. On the other hand, I once gave my own three-year old spayed female Siamese cat three-quarters of a tablet with startling effect and effectiveness. The instructions as to feeding beforehand were followed out, but within half a minute of giving the dose the cat was convulsed with agony, rolling and somersaulting round the room for over a minute then landing in the sawdust pan, voiding six tapeworms, and immediately recovering, though both the cat and I were rather sobered for an hour or two! For roundworms we use tetrachlorethylene in capsule. Unfortunately, unlike dogs, cats are prone to vomit at the moment the capsule bursts in the stomach, but the drug is well tolerated, with the exception of some temporary inco-ordination of movement, so we dose at a slightly higher level than to dogs, to allow for some loss through an initial vomit.

Chronic distension of the bowel we meet from time to time, the distension being more in the nature of a slackness of the musculature of both stomach and bowels than a stretching with bowel contents. It is usually associated with catarrh of the bowel, periodic vomiting and a chronic loose motion. We can claim no great success in curing these cases, though the administration of Ca-bopulbit and vitamin B_1 sometimes brings about a temporary alleviation of the symptoms. The cat may be inclined to sluggishness, but otherwise seems to suffer little discomfort or inconvenience.

And now just a closing word on infectious enteritis. It is not always easy to differentiate it from poisoning, and even more difficult to persuade the owner that the cat has not been poisoned maliciously, as he is always quite certain who did it and why. In my own mind I had never connected ulcerative glossitis with infectious enteritis, always regarding it as a *Beta haemolytic streptococcus* infection which in the great majority of cases responds quickly to sulphonamide or penicillin therapy. Certain it is that practically all these cases recover.

Again I thank Mr. Weipers for all I have learned from his paper, and the N.V.M.A. Congress Committee for the privilege of an invitation to contribute to the discussion on it.

General Discussion

Major Hamilton Kirk (London): He had very little to say—having come there to learn—but one thing he would like to mention with regard to foreign bodies. About 18 months ago a cat was brought to him in great distress, and he found it had swallowed a knitting needle nine inches long. He would never have thought it was possible for a cat to get it from one end of the alimentary tract to the other. The knitting needle looked as if it was made of celluloid and it had altered its shape a little from moisture and heat; but it was certainly a remarkable occurrence.

There was one other similar case recorded many years ago by the late Sir Frederick Hobday. There was a picture of it in his book, but he often used to wonder whether it was an authentic picture.

Dr. J. Gajentaan (Amsterdam, Netherlands), having expressed his appreciation of the opportunity of attending the meeting and Congress, said that Mr. Weipers had mentioned granuloma of the lip. Years ago they used to talk about it as a mere necrosis of the lip; well, perhaps it was necrogranulosis. He made a metallic plate and, with the aid of a friend of his who was a dentist, cemented it on the canine teeth of the cat so that it could no longer lick its lips. The cat had a collar so that it could not push the metallic instrument from its teeth. In a fortnight he saw complete recovery. When the lip was totally recovered, they took the plate away, but a few days afterwards the affection recurred.

Mr. D. D. Ogilvie (Wilmslow, Manchester): He would like to say something, if he might, as a non-practitioner and as one who was primarily interested in cats from the experimental point of view. He had never regarded the cat as an orthodox animal and one which, therefore, was suitable for comparative experimental observations, and for years he had been trying to convince non-veterinarians that this was so. He always came to papers which dealt with cats because most of them confirmed this view, which was pleasant, and the excellent address which they had heard that day was no exception.

The condition described by Mr. Weipers as granuloma of the lip was of interest because he seemed to him to imply that one got with it a specific chemotherapeutic response to crystal violet medication. He would like to ask Mr. Weipers whether he thought that this was so and whether other substances had been fully tested against the condition. Studies had, of course, been made with crystal violet in relation to cancer and other diseases to determine whether it influenced cell growth and structure to any great extent, but it had never been regarded as very active in this respect. That would tend to confirm the idea that the condition was not neoplasmic. They did know, on the other hand, that crystal violet did interfere in some subtle way with the structure of the virus cell, attenuating its pathogenicity while not interfering with its antigenic properties. That observation was made some time ago, and through the researches first of Dorset and of Cole and McBryde in America, and then of Doyle in this country, it resulted, for example, in the development of crystal violet swine fever vaccine.

Various experiments had been made to set up coccidiosis in the cat and also in the dog, but in general they had not been very successful. Coccidiosis in these subjects did not appear to be of much importance in temperate zones, although in tropical and sub-tropical countries it might be of more significance. Certainly in temperate areas coccidiosis—both naturally occurring and artificially induced—was a mild condition which in any case responded rapidly and satisfactorily to the heterocyclic sulphonamides.

He would like to reinforce Mr. Weipers' plea that tuberculosis in cats should be regarded as a serious condition from the public health viewpoint. Dogs appeared to have considerable powers of limiting tuberculous spread, but cats were more highly vulnerable and could be dangerous.

Finally, he wished to question a small point mentioned by one of the openers, Miss Woods, concerning slug bait. Metaldehyde had always been regarded as of fairly low toxicity to mammals and one would imagine, therefore, that cats would have to ingest a very large quantity of diluted bait before trouble would arise. One would also imagine that the final result would be a narcotic death. He thought it would be of value to people interested in the agricultural field if this point could be debated.

Miss O. Uvarov (Ewell, Surrey): She thought they all felt that the excellence of this paper lay in the fact that not only was it thorough, but that Mr. Weipers had left several openings for them to pick up or cotton on to—take which expression they liked.

She would like to start with a slight addition to that question of rodent ulcer. She found that by the time the veterinary surgeon was presented with a case of rodent ulcer, there was a certain amount of secondary infection which, in many cases, was mainly due to streptococcal contamination: so much so, that in many cases one got secondary infection of the superficial lymphatic gland. Although gentian violet was useful in these cases, she always had to employ a streptococcal vaccine by a subcutaneous injection before getting any degree of success with the topical application of the dye alone. In some of these neglected cases the cat was quite ill, and without the use of vaccine she obtained no good results from the gentian violet.

The question of colitis she considered a very big one, as she thought it one of the most frequent conditions in cats, both young and old. She found that colitis was due to the following causes: (1) Sepsis of teeth and gums, which could occur at any age; (2) old-standing cases of pharyngitis which were sometimes left over as a secondary infection from cat distemper, particularly when the cat, having got over cat distemper, was left with a chronic nasal catarrh. She found that quite a lot of colitis occurred in these so-called nasal catarrh cases—cases of the snuffles, as the layman called it; (3) in many cases one got degeneration of the liver. The main thing, in early cases, was congestion of the liver, and one might be able to palpate the liver. In these degenerative cases, however, the liver was so shrivelled up that there was nothing to be felt.

The other cause of colitis was chronic lymphadenitis of the ileo-caecal lymphatic gland which, in the few cases that she had had, were not infections of tuberculous origin.

In the early stages of colitis due to these more degenerative cases, apart from symptomatic treatment by changing the diet, she favoured the use of things like bismuth and kaolin, and she found pepsin, given by the mouth, a very great help. In these cases of what she considered an early lymphadenitis, she had had cats kept alive literally for years. One patient she had kept alive for 12 years, but never did it miss its daily dose of pepsin, because if it did the colitis simply flared up.

In doing a fair amount of urine analysis a good many years ago, she found that the one thing that you did not get in cats were inflammatory kidney lesions. One saw degenerative lesions but never

inflammatory lesions, and she was rather hoping that Mr. Weipers would have included that section in dealing with alimentary disorders in the cat, simply as symptomatology.

She would like to support Miss Freak's statement that she found a tremendous amount of salivation in the using of gentian violet. She thought that was one of its disadvantages.

Coccidia, she believed, was mostly a clinical entity and, in her opinion, there was a long way to go yet before they could say whether it was the state of coccidial infestation or, in fact, coccidiosis.

She wished to support Miss Woods in her suggestion that granular ulceritis could be a beta-streptococcal infection; she certainly had found that to be the case.

She would like to ask the openers if they had used tuberculin testing in cats and, if so, with what results.

Dr. E. J. Voute (Amsterdam, Netherlands): Someone had asked if there was another therapy for the granuloma of the lip. He thought that vitamin A therapy had very good results and he had tried it, together with D in high concentration, but the cat vomited when the concentration of D was too high. However, when one gave under 120,000 units of vitamin A, then, after about a week, the granuloma was finished with. That was one point.

Then he had had about 20 cases of tuberculosis in cats. He did not know exactly how the cats got it. They became fistulated in several places on the body, but he had tried treating them with paraminosalycilic acid with very good results. After two to three injections of 5 per cent. solution the fistula closed and the cat became brighter again. That, however, was only after the lapse of one month: he did not know what happened after many months.

Finally, he would like to make a rather dangerous remark about diarrhoea in older cats. He had treated this with homoeopathic medication with belladonna with very good results. All the cats responded in two or three days to this medicament.

Mr. Joh. C. Peters (Rotterdam, Netherlands): He had had some cases of foreign bodies in the alimentary tract that came into the respiratory tract which were rather interesting. The first one was a cat that showed symptoms of a foreign body in the throat, but he could not find it. He took some radiographs of it, but not knowing the subject of the paper there, he did not bring them. However, this was a piece of fishbone that had settled in the dorsal part of the larynx and when he found it on the radiograph he was able to take it away.

The cause of the second was a piece of barley. When first he saw the cat it was very miserable, and it showed the same symptoms as when something was suspected in the throat. When he examined the throat he could not find anything, but by lifting up the soft palate he could see the last 'piece' of the grass—it went right through the hole into the nose. He could not remove it because it could only pass in a forward direction. The animal recovered, but he thought the grass was still in the nose because he could not see any means of getting at it through the nostril.

In reference to tuberculosis, during the war, in 1944, they found a high percentage of tuberculosis in cats. Perhaps they knew that in 1944 the western part of Holland was quite isolated and the Germans tried to starve them. They succeeded in part, but some people were still alive. This high increase in tuberculosis occurred only in the western part, and they thought it was because in the western part people from the big towns went to the country to get some milk from the farmers, a pint or half a pint, and, though they starved, they always gave a good portion to their cats. For many years all the milk sold in the big cities had been pasteurised but, of course, not the extra milk on the black market or that taken from the farms by the people themselves.

Concerning infectious enteritis, it was very difficult to differentiate between infectious enteritis and leucopoenia on clinical symptoms alone. In the autumn of 1948, in Rotterdam, he found that all cases suspected of infectious enteritis, in which he could examine the blood, had in the blood about 10 per cent. of the normal number of white blood cells. He did not know if the disease in Rotterdam was true leucopoenia, because very few *post-mortem* examinations were made, but he would try to follow it again when it came back.

Dr. Mark L. Morris (United States): Listening to this discussion, he had failed to hear anything concerning the rehydration of dehydrated cats. He believed this condition frequently occurred with an animal suffering from gastro-intestinal disease. They would pardon him; he came in late, and it might have been discussed before he entered the room, but he did believe that rehydration in the sick cat was extremely important.

Secondly, the cat went into protein imbalance very rapidly; consequently, it was necessary, they believed, in all cases of gastro-intestinal disease, that the cat should replace the loss of protein as rapidly as possible. They also believed that the cat had a high requirement for the B complex and that should be a part of the rehydration therapy.

The Reply

Mr. W. L. Weipers: There had been many interesting points raised, and he was glad to see that no one had been at very great divergence with him on any very important or fundamental point: though there were some divergences that resulted, he thought, partly from observations and partly from geographical differences.

He would try to deal with the matters raised regionally, as he had done in the paper. He thanked all those who had taken part in the discussion, particularly the two openers.

The first subject that came under discussion was granuloma. Miss Freak indicated that she had gained many advantages from the use of actual cautery. His treatment before he started using gentian violet was to remove the swelling surgically and cauterise either with actual cautery or with some chemical agent. He found this really quite beneficial, but his percentage of cures was much less, and in severe cases that had progressed for some considerable time one was left with a cat which had a complete sardonic grin and which permanently showed its teeth. Such cases, even when completely recovered, showed a good deal of saliva dripping from the side of the mouth. He agreed that excess salivation sometimes was associated with the application of gentian violet, particularly in the cases where the jelly type was used. In the very bad cases nowadays, he put the cat under complete anaesthesia and injected the gentian violet into the skin round the lesion. He thought it was quite possible that one had an associated staphylococcal infection, but Miss Uvarov had indicated that she found it necessary to use a streptococcal vaccine; that had not been his experience. The treatment he gave was quite simple and, in most cases, he obtained a complete recovery; there was only one complete failure. He had seen also the condition of slight thickening of the cervical gland.

Miss Freak again brought up the matter of ulceration on the inside of the lip. That condition he often associated with excessive tartar of the teeth, and frequently he found that these cases did respond to removal of the tartar, though he had occasional cases where the condition still persisted. The ulcer responded quite well to cautery. The cat, in severe cases, did scrape very vigorously at the side of the mouth. One found the same signs with acute gingivitis—excessive scraping and the animal furiously clawing at the side of the mouth. He quite agreed with Miss Freak that loose teeth did not give rise to symptoms of this clawing movement, only when the tooth became displaced out of its normal position and even turned partly round about.

Miss Freak had had cases of foreign bodies due to pampas grass. Well, in his inhospitable climate pampas grass did not flourish. The same applied to the matter of barley which was brought up by a Dutch speaker. They had very little trouble with barley—not even the trouble so frequent in England due to the presence of barley awns, which lodged in the feet, or ears, and he had certainly never seen them lodged in the throat. He had occasionally had long pieces of grass lodged in the oesophagus. He did an exploratory operation on a cat some time ago, when he could not discover the nature of the foreign body. He felt there was a foreign body, but he could pass his oesophagascope right down into the stomach. He resected two ribs, opened the oesophagus and removed a piece of hard grass—four inches—something in the nature of wild oat grass. One would expect that the signs would be characteristic when the foreign body was projecting from the upper part of the mouth as in the case described.

The type of discharge that would be present in an abscess resulting from a foreign body in the oesophagus was, he thought, characteristic: it was red, pus-y, and always offensive, and contained little flocculations like fibrin. He always made a point of telling his students that if they ever opened an abscess of this nature in the neck they must always explore for the possibility of a needle or foreign body lodged in the wound.

In tuberculosis ulceration, they got a characteristic discharge. It was usually quite wet and clear, and the edges of the wound were thick and red. This material was very rich in acid-fast organisms, which were quite easily demonstrated. He considered that differential diagnosis between carcinoma and foreign body in the oesophagus was fairly easy. The former condition had a characteristic history. One could pass the oesophagoscope and see the roughened mucous membrane, in some cases papillae-like thickenings projected into the lumen of the oesophagus. In cases of oesophageal trouble, he made a practice of passing a small human rubber stomach tube. He thought it was good practice, when one suspected that a needle might have been swallowed, to put it down as far as the stomach, and it was unbelievable the amount of mucus that would be withdrawn on the end of your tube. This thick mucus frequently caused the thread of the needle, which was the original cause of the trouble, to adhere to the tube and so facilitate its removal.

Someone raised the matter of impaction of foreign bodies in the pharynx. He maintained that no one could examine this region properly without putting the animal under complete anaesthesia,

as the cat had a comparatively long soft palate. He put the animal under light anaesthesia, inserted a gag in the mouth, and used a pair of peritoneal tissue forceps to draw forward the tongue; then, with a retractor, he drew forward the soft palate and exposed an area not previously visible.

The medicinal treatment in stenosis of the pylorus was asked for. The usual one was a bismuth preparation, and also he had combined this with an atropine preparation.

He thought the condition that Miss Freak described as pancreatitis was fairly common: it had been mentioned by several speakers. Faeces were often of that peculiar bulky nature and offensive, and he thought frequently one got the other type of diarrhoea, loose bowel movement, that one associated with disease of this gland. He believed Miss Uvarov suggested that the condition might be a sequel to that. Also she indicated that the colitis one got was associated with lymphadenitis, and was the result of the lymphadenitis. He thought in both these conditions the colitis and the loose bowel movement were in many cases a manifestation of abnormality of the pancreas and, in many more cases, of the liver, and that the lymphatic enlargement was secondary.

Regarding the impaction of the bowels met with in cats, Miss Woods said that often she got impaction in the colon with a continuous mass. In his opinion, it was a matter of degree and duration. In some cases it was continuous, in others it was not: but in the process of relieving it, it often became obvious that the continuous mass consisted of tightly packed cakes. This condition was very easily diagnosed in so far as it was easily palpable and the animals made little attempt at defaecation. In fact, as he indicated in his paper, when one had the history of the cat—that it was, presumably, suffering from constipation, and frequently attempting to defaecate——in 99 per cent. of cases one was dealing with obstruction of the urethra. He had never had to resort to colotomy for relief of foreign body in the cat, and he thought one would have to have a lot of courage to relieve this condition surgically. He would always be afraid of secondary infection. He had done it in a dog, but it was a very awkward place to work in and one would be very apt to get infection.

He had never recognised prostatic enlargement in the cat, though he might have missed it. He had never seen any trouble with the anal glands.

Mr. Ogilvie asked about the effects of gentian violet, and if that was the only treatment they had used in this granuloma of the lip, He thought they had tried every possible remedy, including the sulpha drugs and penicillin, without any results. He did think the drug was specific in these cases. They did know it had a specific effect with certain viruses. He was exceedingly interested in Dr. Voute's contribution indicating that subcutaneous doses of vitamin A were capable of curing lip granuloma, and he would certainly try it in the next case. It should be very useful as an adjuvant, if not a sole remedy.

With regard to coccidiosis, he had read what had been published and heard Miss Uvarov say she had found coccidia in specimens. Mr. Ogilvie indicated that he did get it but he was not sure of the clinical significance. He (Mr. Weipers) had had perhaps 40 or 50 cases where the history might lead one to suspect that coccidia would be present, but microscopical examination was negative. The clinical history showed the type that was described in 1925 by Martin, the French worker, but they had not so far managed to isolate this organism in cats in the West of Scotland. It might occur, but again he did not know what was the clinical significance. He was of opinion that one got very distinct variation in different parts of the country.

One of the openers—he thought Miss Woods—brought up the matter of metaldehyde poisoning. He had never seen this condition in cats, though quite often in puppies. It did not appear to be quite so deadly as one would expect. With ordinary treatment one got many recoveries unless excessive quantities were taken. He believed that poisoning in cats was a most unusual condition, largely because they were most fastidious animals: many cases suspected to be poisoning were early cases of enteritis. He agreed with Mr. Ogilvie that cats were a race apart, quite different in their responses, and complete introverts. They thought of no one but themselves, though they were very interesting animals to have about the house.

He had never had a case of lysol poisoning. He used to get cases of phosphorous poisoning: all were associated with a marked jaundice and a history which was often diphasic. That, he thought, was in the old days when a well-known rat paste (proprietary) contained phosphorus. The rat paste sold now, he understood, contained zinc phosphide.

He had never seen serious foreign bodies in the lower part of the small bowel of cats. Anal fistula he had seen occasionally.

In connection with worm infestation, he had little upon which to comment. He saw it quite often, and thought a cough was characteristic of this condition. The cat folded its feet under, stuck out its head, and gave two or three violent coughs as though it were going to be sick. It was not sick, however, and might no cough again for several days.

Major Kirk had spoken about a knitting needle in the lung. That was one of the larger foreign bodies, but a cat could get into trouble with most of these things.

He did not think the condition of the lip—probably his "lip granuloma"—that Dr. Gajentaan, of Amsterdam, described, could be due to *Act. necrophorus*, otherwise it would respond to penicillin. In his experience, lip granuloma did not respond to penicillin.

He thought the cat was amazingly free from kidney infections, and he had often marvelled at it. With regard to leptospirosis, which caused so much kidney trouble in dogs, the cat appeared to be immune, though he did record in his paper one outbreak of *leptospira icterohaemorrhagica* (Watkins) on a silver fox farm, where one cat certainly died with jaundice.

Vitamin A he had discussed.

In reference to diarrhoea, he had not used homoeopathic atropine, but thought it might be worth while. Diarrhoea was largely symptomatic, and one should try to find the actual cause and treat this naturally.

He had not found tuberculin tests of much value in diagnosing tuberculosis in cats. He had tried various tests, but it might be that he had not hit upon the right one.

He was interested in the relation of tuberculosis in cats to the milk supply. It was what one would expect, more or less, and he thought if one could make a graph of the frequency of tuberculosis in cats one would get a distinct correlation between this figure and the amount of surgical tuberculosis in children in the same area. He was surprised—though perhaps he should not be—at the fact that the Dutch people went to so much trouble to get milk for their cats: he thought that such action was a prerogative of the mad English!

Dr. Morris, of America, had talked about the rehydration of dehydrated cats. He (Mr. Weipers) considered it was very important, but in the early part of his paper he apologised for the fact that because of the wide range, he would have to select material and probably concentrate on the clinical side to the exclusion of treatment.

Again, in the matter of protein in cats: in a sick cat he thought it could be quite important, but not in a healthy cat. Such a cat seemed to be unlike any other animal in that it could be shut in a cellar for ten days or a fortnight—in some cases, apparently, without water—and then walk out as if nothing had happened.

He thanked them for their indulgent reception of the paper.

WORLD MEDICAL ASSOCIATION

Twenty-four countries were represented at the meeting of the World Medical Association held in London during the past week under the Chairmanship of Dr. Charles Hill, Secretary of the British Medical Association. This association, membership of which is open to national medical associations, was formed at a meeting in London three years ago and has as its first aim the promotion of closer ties among the national medical organisations and among doctors. It had before it the reports of committees which have been studying social-security schemes, post-graduate education, the wording of an international code of medical ethics, the relation of the profession to the medical Press, and the "standards of medical care and allied subjects"—including such matters as unqualified practice and the advertisement and sale of patent medicines.

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The death of 40 chickens, belonging to the four lighthouse-keepers on Bass Rock, in the Firth of Forth, has been under investigation by the Ministry of Agriculture. It is stated that blood samples were taken in order to confirm or disprove a tentative diagnosis of Newcastle disease. A search was to be made by Boy Scouts, along the coast from Prestonpans to Dunbar, for dead or ailing sea-birds, which it is thought may themselves become infected with the disease and transmit it.

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Weekly Wisdom

The problem is to find some means of creating a judicious balance between population and resources; for so long as overpopulation continues to exert an intolerable pressure on food no political system will be stable. If a reasonable balance can be achieved, political systems will become less important; but we must understand that civilisation flourishes only in prosperity, and that, so long as there is a hard struggle for the means of survival, the liberty of thought and person which we in the West so greatly value will be continually threatened.—The Lancet (editorial article, "Food and Fecundity," October 1st, 1949).

PAST—PRESENT—FUTURE

By

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The Past

The reputation of a historian is more secure than that of a prophet. The past fills a shallow grave; the present is a fleeting moment, but the future is the materialisation of circumstance. History seldom repeats itself. The past and the future are of different generations, each adopting a technique essential to survival of its individuals; each bearing the mould marks of its encompassing environment.

As a profession, we have every reason to be proud of our past, possibly an equal right to be satisfied with our present status. To some extent, however limited, we may take a hand in shaping the future and the present seems to be the moment when, by our decisions, we are most likely to be of help or hindrance. We hope that our counsellors will choose wisely so that our children and their grandchildren may be able to look into the past, as we do to-day, and feel equally satisfied that they, too, have made progress.

The history of our profession honours many great names, those of men who overcame the limitations of the age in which they lived and worked. Far more names, equally worthy, are never recalled—those of the rank and file, who gave of their best, but escaped fame. We can picture the men of the past and some of us are not too young to appreciate their strivings and endeavours. The men of the present rub shoulders with us to-day and many of them are no less honoured because we know them intimately. Can we, however, by the exercise of mental genetics, visualise the men who will fill our places a generation or so hence? We may be associating to-day with their grandfathers and their great-grandfathers, but to what extent does ancestry count? Will the graduate, who boasts such, inherit a greater capacity to diagnose accurately and treat wisely the ailments of domesticated animals than he or she whose father was a company promoter and whose grandfather was a professional politician? Do successful financiers often fret silently because they would have preferred to practice the veterinary art?

These are some of the things we want to know, because however vague the connection between breeding and performance may appear, it is equally necessary to select carefully the occupants of a training establishment, whether it be a college or a racing stable. We are not in a position to preview the national politics of ten or a hundred years hence nor the part which international affairs may play in our future. It is certain that their nature will influence us greatly. For instance, in a socialistic world, would ancestry count at all? In a profession, in which the members were merely servants of the State, would individuality be suppressed? Would we spend our energies in obeying regulations and completing forms or would we be encouraged to prosecute research on national grants? We cannot answer these questions.

When we look back into the past and upon the members of our own profession who peopled it, we are amazed at the vicissitudes and sacrifices which these men willingly bore. True, in our calling, as in others, each was in those days a law unto himself. Co-operation was practically non-existent; ethical standards had not been formulated and a great deal of the work of some of our pioneers was marred by selfishness, egoism and self-advertisement. The business brain tended to oust the academic, the showman overshadowed the workman. To-day, thanks largely to the opportunities, afforded by our divisions, to meet and fraternise, the whole spirit of our Society has changed. True, in some quarters, a tendency to beat the drum may not have been altogether eradicated but this is a failing not confined to one profession. The public, however, is better educated, on the whole less gullible and more able to sift the wheat from the chaff, when inclined. The only excuse for gulling the public is that a section of the public insists on being gulled. The really great men of yesterday, like the truly great of to-day, are content with achievement, they seek no publicity. Their reward lies in service.

Modern methods of travel have entirely altered the nature of veterinary practice. Forty years ago, the only available means of locomotion was the horse or the horse-drawn vehicle. As a result the radius covered by each veterinary surgeon was limited and it required a correspondingly greater number of practitioners to serve a given area. On the other hand, the work was not so varied, nor so plentiful. Digestive troubles, however, both in horses and cattle, were frequent owing to the availability of feeding materials. Nowadays, they are rare since most animals exist on a starvation ration. The heavier tasks made up a large part of the daily toil. Parturitions, prolapses, colic cases and castrations needed physical strength and travelling on horseback or behind a trotter, did nothing to lessen the ever-prevailing fatigue. The public, too, had not become educated, as it has to-day, in the demands it makes upon its servants. It was considered quite correct to await bedtime before calling in the practitioner, as a last resort. This necessitated harnessing one's own horse into the buggy, driving and toiling half the night and unharnessing the animal, rubbing it down and feeding it on return. As a consequence most able-bodied practitioners preferred the saddle. The writer once drove and rode for 21 days and nights with only one night, the eleventh, in bed. This is not cited as a record but as an example of what was expected of the country practitioner. In these days of organised leisure, fast travel and ready-made remedies, the graduate knows only the luxury of practice. He is not compelled to combine it with a test of endurance. The country doctor was equally sorely tried and it is a wonder that he found himself capable of riding horseback by day and by night and still able to grapple with the maternity cases, operations and casualties which he was so often compelled to tackle singlehanded, with the aid of such appliances as he could carry, tied to his saddle, contained in his saddlebags or strapped around his body. In addition, through lack of bridges, he frequently forded rivers, slid down precipices and in lonely districts evaded, if he were lucky, the attention of undesirable characters. When we consider that for months in the year, neither doctor nor veterinary surgeon found time to change or dry his wet clothes, it is a wonder that the two professions were so often recruited from the family ranks.

The equipment of the physician and the veterinary surgeon, 40 years ago, was primitive in the extreme. The firing iron, in the treatment of animals, was ubiquitous. It was employed in the treatment of lameness, for castration, docking, staunching bleeding, the extirpation of tumours, and in the treatment of fistulae, sinuses and even accidental wounds. Some of these cases recovered. Seton-needles, 6-inch bistouries, chisels and hammers, wondrous teeth instruments, and even more murderous obstetric appliances, occupied the floor of the buggy. Local anaesthetics were unknown with the exception of cocaine, which when employed at all, was usually administered in lethal dosage.

The stock medicines were epsom salts, croton oil and aloes, ammonia in all its forms bolstered up with ginger, mustard and other intestinal irritants. The worst effects of these were masked, on occasion, by huge doses of laudanum and,

later, by morphia, hypodermically, on those rare occasions on which the plunger of the syringe had not seized up, for want of castor oil. Treatment was nothing, if not heroic. The reputation of the veterinary surgeon often ran parallel with his ability to freeze the blood of his onlookers.

Probably the first and most prominent milestone on the road to modern therapy, so far as the country practitioner was concerned, was the discovery of a successful treatment for milk fever in cows. Until the days of Schmidt, a large proportion of animals affected with this malady died and the handicap to the dairy industry was incalculable. Those which failed to do so within reasonable time provided the practitioner with a great deal of travelling and worry and an unparalleled opportunity for the exercise of pure empiricism. Considering the vast amounts of chloral hydrate, whiskey and treacle, which the unfortunate victims consumed, it is amazing that any survived. Schmidt's iodide treatment was superseded by chinosol injection until some practitioners, in the absence of chinosol, found that boiled water was equally effective. Oxygen next replaced fluids and, in its turn, gave way to simple air. Before anyone had time to explain why dilatation of the milk ducts should effect a cure, Dryerre and Greig came along with their theory of hypocalcaemia and, for a while, more and more cows recovered, at the expense of a portion of their hides. A little later, the borogluconate of calcium overcame this disadvantage and excepting for the fact that milk fever is not always a simple hypocalcaemia, it has proved a very successful remedy.

Since these comparatively recent days, great progress has been made. The heavy horse is seldom bred nowadays, except with an eye to its probable food value, should it be unwanted for other purposes. Unfortunately, it almost disappeared before the days of modern research and in spite of generations of horse doctors, we still know very little about this animal.

Thoroughbred horses, however, are still in demand and are becoming the subjects of intensive research. Perhaps it is well that this should come late rather than never. For centuries, the horse solved the subject of transport and was an animal of great economic importance. During the whole of that time it was maltreated, misunderstood and abused in every possible way. Now that it has ceased to function as a wage-earner and has been relegated to the domains of sport and gambling, it may receive every consideration, so long as it continues to win money for its owners. Failing this, it can still be eaten, which is a better fate than often befell its ancestors.

The Present

Nowadays, we are fast learning a great deal concerning bovine physiology. We know a little about digestion and can estimate the least quantity of food upon which a cow, a calf or a bull can continue to exist. We are learning the lowest cost of producing a pound of beef or mutton or pork. The fact that the finished product is inedible is of no consequence in these days of rationing. We have learned a little about the physiology of lactation and we have set a target for the future yield of the milk cow—the highest possible. What we have yet to discover is how long nature will put up with such abuse and how long it will be before she decides to cease further production of this animal entirely.

Reproduction has engaged the attention of our research workers for the past few years. We know now, more or less, why some cows produce calves and why others fail to do so. In spite of the volumes written and the speeches recorded, we still do not know how to induce the latter to alter their ways.

Knowledge, rightly applied, is a powerful asset. Our young research workers have discovered more about the functioning of the animal mechanism, during the past ten years, than their predecessors achieved in a century and all praise is due to them. The only thing that has not yet impressed them is that the cow is a creature of flesh and blood and not, in reality, a machine at all. They have still to learn that while physiological processes can in some ways be controlled, they cannot be forcibly modified in any one direction without upsetting the balance in another.

Therapy has seen many changes since the advent of udder inflation. The sulphonamides have been discovered, exploited and largely discarded, though many of the group still have their uses when skilfully prescribed.

The treatment of mastitis with acriflavine was heralded as a great discovery and remained in fashion for, at least, a year.

We have discovered the dangers of irrigation and at the moment we are in the penicillin age, chiefly because the manufacturers prolonged their existence by supplying their products in natty little tubes, which can be used equally well by anyone who has discovered a means of obtaining them. Already a slight cloud of " disappointment " has appeared on the horizon and it may not be long before penicillin goes the way of all remedies and something " better " appears. It takes quite a while to learn that no medicament is a cure-all and that each requires scientific discretion in its application.

Medicine is not alone in its glory. Surgery has advanced by leaps and bounds. Although we have discovered the limitations of the mine detector, we are by no means deterred from opening the bovine stomach on the least provocation. The percentage of recoveries is often inversely proportional to our skill in diagnosis. Caesarian section has opened the eyes of the lay public to the modern advances in large-animal surgery. Its practical application, under farmyard conditions, hampered as we are by the shortage of hours in the normal day, is not so easy as it sounds but it definitely holds a place in practice. One must overlook the tendency to rush to laparotomy when ordinary obstetric manipulation would provide a safer and more expeditious solution, in experienced hands.

Especially is this advance in surgery manifest in the case of the small animal. Modern teaching in the colleges and the standard required by examiners, has greatly improved technique. There is, however, a danger that the elaborate fittings of a modern teaching institution may be sadly missed by the graduate who has to improvise, but it is a fact that the most successful work has been carried out under the usual conditions of practice. Apparatus helps but does not make the operator. The greatest of God's gifts to the surgeon are nimble fingers and a sense of touch. Without these, the best equipped operating theatre can do but little for the patient. Students, nowadays, are taught that accurate clinical diagnosis is dependent upon the use of gadgets and laboratory findings. To a certain extent this may be true, but to the man born with eyes and fingers, it seems unnecessary that every case of lameness should require an X-ray examination. It is unfashionable to place any reliance upon touch. Simple observation is not encouraged and too many students fail to realise that their hands have better uses than that of distending the pockets of their trousers.

The genuine small-animal practitioner, at the moment, is probably doing most to increase the prestige of the profession. He or she, meets the people of every social grade and it is in our favour that a great many of the members of our profession who engage in dog and cat practice are very nice people indeed, not only socially but also professionally. The majority of large-animal practitioners would further our cause appreciably

if they would employ an assistant who was actively interested in small-animal work. A contempt for this type of practice, even if sub-conscious, registers black marks in numerous households.

The essence of service lies not in what good one may do oneself but in the greatest amount of good one can do to the greatest number. In small-animal practice lies the ideal sphere for the woman graduate and fortunately our ranks now hold very many who add greatly to the credit of our profession. The uplift which they contribute to our prestige cannot be over-emphasised. There is yet room for a great many more.

There is a tendency in our colleges to-day to concentrate on large-animal work, only too often with little opportunity for practical demonstration. At present, farm animals are of great economic importance and the supply of foodstuffs for the population lies largely in our hands. The continuance of our work, in this direction, however, is dependent upon the existing economic position of the large-animal owner. The public demands milk and the Government is giving valuable help to the future of the dairy industry by paying a subsidy for the rearing of calves. How long the milk situation will maintain its present position and how long the Government will be willing to pay out quarterly cheques to L.V.I.s depends on a number of circumstances, more or less outside the control of the practitioner. We will refer to this subject again later.

Unless international situations arise which call for the wholesale destruction of non-productive animals, small-animal practice will continue to flourish in spite of the prevailing shortage of cash. Even on the worst possible grounds, personal economics, it should be afforded every encouragement, with the object not only of providing a public service but of maintaining professional employment. Very few new graduates are capable of performing even simple operations on live animals until they have obtained practical post-graduate experience. This is a reflection on our colleges but it is understandable that students cannot be permitted to practice on living animals which are somebody's pets. The prestige of a college is akin to that of a practice—patients must survive. Again, in spite of our Animal Husbandry Classes, very few recent graduates appear at all comfortable when in the vicinity of a horse. They stalk it and manoeuvre around it from a distance as though it were an academy exhibit, and handle its limbs with as much embarrassment as though the horse were an elderly spinster. If it happens to be even obviously lame, they display as much uncertainty in deciding which is the offending limb as if it were a writhing octopus instead of a simple quadruped. It is certainly difficult, nowadays, to procure lame horses for demonstration but one feels that greater effort should be made, during five years' tuition, to instil some of the elementary principles of horsemanship so that the graduate may enter a stable with a greater degree of confidence and with the feeling that his practical knowledge of horseflesh is at least equal to that of the stable lads. It would also be an advantage if he, or again she, were able to handle the smaller animals in such a manner as to indicate some familiarity with their psychological characteristics. Every patient is the pet of someone. It is not necessary to introduce oneself by a commando-like attack on the scruff of the neck and the application of a tape, violently twisted around the muzzle. Gentleness and sympathetic approach are appreciated by patient and client alike. The feminine members of the profession are not so usually at fault in this respect. One should be able to open the mouth of a dog or cat, palpate its abdomen, inspect its ears and eyes, even take its temperature, without resort to brute force.

It should no longer be taught in our colleges that it is essential to administer a general anaesthetic before resorting even to a simple examination of the patient. It is likely that when engaged in actual practice and faced by a waiting room filled with clients, fidgeting to get home to cook the dinner, the young graduate will overlook this part of his teaching. If he is unable to adapt himself to the exigencies of practice, and persists in his anaesthesia complex, it is to be hoped that in planning his premises, he will allow a good deal of space for his mortuary.

During the past 20 years cattle practice has changed out of all recognition. When one remembers the vast variety of drugs which were forced down the bovine gullet, or trachea, one wonders what the effect must have been and in a reflective mood, one mourns a life, hitherto, worse than wasted. At present, the bovine pharmacopoeia is very limited, but terribly expensive. Unless the farmer is prepared to pay for this modern transformation, practices must be run at a loss. For the young graduate, accurate diagnosis may be difficult but shotgun therapy is less dangerous; the gun carries fewer barrels.

There is a great tendency among the more recent entrants to the profession to spend their capital on mechanical aids. This applies specially to the obstetrical side of practice. The graduate who finds it desirable to purchase a trailer to carry his calving gear would be safer if he omitted to fasten the coupling.

The development of the tuberculin test has effected an enormous change in practice. Possibly, in its early days, tuberculin was more responsible than any other single factor for the dissemination of the disease. Nowadays, those who buy untested stock, probably introduce them into congenial company.

The veterinary surgeon, with a large practice, is becoming more and more at the mercy of his staff. As his connection extends he finds it increasingly difficult to maintain contact with his clients and his cases. Unfortunately for the practitioner, every new graduate, however inexperienced or inefficient he may be, has a queue of practitioners awaiting his services. Each additional assistant, in a large practice, means financial loss to the principal, as he is usually unable to earn the additional £1,500 a year, the profit from which is necessary to pay his salary and expenses. With experience, he may earn his keep. Later, perhaps, he may show a profit. There is a great deal to be said for a year of probation before new graduates are let loose on the public.

The Future

It is no libel to suggest that a number of practitioners make hay while the sun shines. In other words, they rank their Ministry work, with certain pay, first, and their ordinary clientele second.

Tuberculin testing, herd examinations and the general work of an L.V.I., occupy a great part of the time of the veterinary surgeon in certain areas. This is all routine work, demanding little skill, and most of it would come within the scope of a trained lay inspector. Already we have lay meat inspectors and artificial inseminators. It is not unlikely that other minds may have realised the fact. We are constantly hearing that there is a lot of other work on the farms which needs veterinary attention and that the supply of graduates necessary to carry out this work is at present insufficient. Already schemes are being worked out whereby the practitioner may be more readily called upon by his client, with a different system of remuneration. All of us have seen the fruits of nationalisation in our sister professions and few of us wish to become purely servants of the State. Nevertheless, the fact stands out that

if the State is not satisfied with the present situation and unless we are able to show that we are fulfilling the needs of the agricultural community or are prepared to formulate a policy which will fulfil those needs, then we are liable to lose our present control.

The immediate prosperity of the country practitioner depends upon certain factors which may or may not continue. Firstly, it depends upon the present high value of dairy cattle and particularly upon the excessive prices paid for pedigree stock. The value of any commercial animal depends, eventually, upon the profit which it will return. As soon as the buying craze settles down and pedigree herds become capable of maintaining their breeding balance, rash buying will cease and the pedigree animals will be forced to compete with the non-pedigree on the basis of production. Profits will depend upon the current price of milk per gallon. Calf rearing subsidies help the farmer enormously but, at the same time, they shorten the period of price inflation. The more calves reared, the less will be purchased. Soon values will become correspondingly lower.

The present demand for milk may not last. It has been stimulated by propaganda as well as by necessity. During the existing shortage of fats and protein, milk is the only answer. The public does not consume milk because it likes it but because it must. An increase in the meat ration or, what is even more likely, a rise in the national egg supply, would alter the whole picture. The production of a synthetic, sterile, milk substitute, acceptable to the public taste, might well be the avalanche.

It would be a pity if, at the present moment, any neglect of routine farm work lent credence to the assertion that the general work of the farm is not receiving the attention at our hands which it deserves. Farmers regard our services as an investment and are only too glad to do without our help in matters which they do not regard as involving economic loss. The veterinary profession is therefore not wholly to blame in this respect. If, however, some of the work of the busy practitioner were relegated to other hands, it would be possible to devote more time to the everyday care of farm stock.

Who would pay the bill? Sooner or later, someone will hit upon a scheme which will enable the farmer to call upon his veterinary surgeon at any time, for any reason, without incurring additional cost. Whether the service he receives under these conditions will be better and more efficient will remain to be seen.

The next few months may be a critical time in the history of our profession. May we decide wisely in our discussions regarding our future policy.

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allow to cool to a jelly; roll into sticks and wrap in cellophane. For use, apply the cement to heated glass and press the pieces together. The cement is almost shatter-proof, does not become brittle with age and withstands washing in hot water. The method of counting the eggs in a sample of faecal suspension is described and the factor to be used in converting the number of eggs counted to the number of E.P.G. depends upon the combination of objectives and oculars used with the microscope. Some of the advantages of the modified method are that counting time is reduced and counts lower than 200 E.P.G. can be recorded, while the new type of counting chamber can be cleaned more readily and is gripped better by the arms of the mechanical stage.

J. N. O.

ABSTRACTS

[Vaccination of Bovines against *Brucella* infection by the Inoculation of an Avirulent Strain and a Gluco-lipoid Antigen. (Trans. title.) Lisbonne, M., Roman, G., & Quatrefages, H. (1947.) *Bull. Acad. vét., France.* **20.** 143–146.]

The strain used was a smooth, avirulent, aerobic culture of *Brucella abortus* (B112). This was inoculated in guinea-pigs and cattle combined with a gluco-lipoid extract derived from a virulent strain of *Br. melitensis*. The injection was given intradermally or subcutaneously but no details of the number of organisms injected or of the method of preparation of the extract are given.

Seventy-seven heifers free of infection were thus vaccinated and subsequently introduced in heavily infected herds where large numbers of abortions due to *Br. abortus* occurred. Over a period of six years only one of the inoculated heifers became infected. After vaccination agglutinating antibodies appeared in the serum but these disappeared about ten months later. The authors therefore considered it necessary to reinoculate the experimental animals at intervals of eight to ten months.

B. W.

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[Some Modifications of the McMaster Helminth Egg-Counting Technique and Apparatus. Whitlock, H. V. (1948.) *J. Coun. Sci. & Indust. Res.* (Aust.). **21.** 177–180.]

Whitlock describes modifications of the McMaster helminth egg-counting technique and apparatus; these make for increase in speed whilst still maintaining simplicity and accuracy. The original technique has been altered only by the method of stirring the suspension which is made up of 2 grammes of faeces and 20 ml. water or saturated watery solution of ortho-dichloro-benzene, the latter being used where no refrigerator is available or in field work during hot weather. This chemical poisons the eggs, preventing further development, but does not impair their floatability. The suspension is later made up to 60 ml. with saturated sodium chloride solution and stirred by an electric mixer described by Kauzal and Gordon in 1941.

A new type of sieve pipette is used to withdraw the sample from the suspension. The pipette, attached to 48 cm. rubber tubing fitted with a glass mouth-piece, consists of 10 cm. glass tube of 8 mm. internal diameter fitted at the distal end with a piece of rubber tubing that overlaps the glass tube by 4 mm. A circular groove is cut on the inside of the rubber tubing and into this is fitted a disc of metal gauze of twelve meshes per cm. which excludes large pieces of faecal debris from the sample finally to be examined. The new counting chamber slide, of which a drawing is given, has a base of 7·5 × 2·6 cm. At either end and in the centre are glass platforms 3 mm. thick, the end platforms measuring 2·4 × 2·6 cm. and the centre one 1·7 × 2·6 cm. Thus two troughs are provided. The end platforms overlap the base by 2 mm. and upon each is mounted a supporting strip 1·5 mm. thick and 7 mm. × 1·5 cm. The top piece, fixed to the two supporting strips, measures 7·9 × 1·5 cm. and on its under surface are ruled parallel lines 1·5 cm. apart. A new cement is used to fix the glass pieces of the counting chamber together and is made by carefully boiling together 80 grammes best quality synthetic (" Button ") shellac and 100 ml. ortho-dichloro-benzene; add 20 grammes lump Canada balsam and

(Concluded at foot of preceding column)

MEMOIR

EDWARD SIMPSON SHAVE

Professor Shave died at his home, 33, De La Warr Road, Bexhill-on-Sea, early on the morning of Monday, August 22nd, 1949. He was 93 years of age and his passing was peaceful.

It was only in the last few years that he began to feel the full weight of his advancing years and his body became frail so that perforce he had to spend considerable periods at rest in bed. Although time made its undeniable inroads on his body the same could not be said of his brain, for it kept remarkably active and he was able to conduct his business affairs, receive visitors and read until within a relatively short time of the end. Indeed, when I called to see him last summer he recognised me at once and carried on a conversation about past and present affairs in the profession and at the Royal Veterinary College with that modesty and wit which was so characteristic of him. I was accompanied by a mutual friend, an old student whom he had not seen since 1914. To my surprise he recognised him although, as might be expected even of anyone much younger in years, he could not recall my friend's name.

Photograph by "Bob" Burgess, Senior Laboratory Assistant, Royal Veterinary College.

"Teddy" Shave was an Essex man. He was born at Bridge House, Springfield, near Chelmsford, on March 29th, 1857. His father, Edward Simpson Shave, was a veterinary surgeon and practised from that address. The practice has been continued to this day, being conducted after his father's death by that renowned horseman, Nicholson Almond. Then came William Snowball Mulvey for many years, and now it is carried on by Messrs. R. Massey & P. J. Mitchell. His father was a man of some local renown and Shave was born into an environment which was to extend over 80 years, for it was only the great difficulties associated with war-time travel which compelled him to relinquish in 1942 his post as examiner in Veterinary Anatomy for the R.C.V.S.

He was educated at that ancient and justly renowned school, King Edward VIth Grammar School at Chelmsford, and from there he proceeded to the Royal Veterinary College at Camden Town. The Principal of the Camden School at that time was James Beart Simonds.

Shave had a creditable college career and graduated M.R.C.V.S. on April 2nd, 1879. He gained first place in the Fitzwygram prize competition and second place and the Bronze Medal in the Coleman prize competition. He proceeded to his fellowship, the date of this being October 21st, 1890.

His first job was at Hereford, where he went as assistant to Mr. Barling. Barling was a hard taskmaster who took steps to see that any prospective assistant was up to a certain standard. As soon as young Shave arrived Mr. Barling asked, "Can you ride?" On the reply "Yes" being given he said, "Well, we will soon see." A horse was produced, a pole jump erected in the yard and Shave was told to take the horse over it bareback. He passed the test to Barling's satisfaction and greatly to his own, for he had never faced such an ordeal before under such sudden or unusual circumstances. Shave told me with a chuckle that he had his own back later. Their only means of transport was on the back of a horse and it was quite usual for the assistants to do 30 and sometimes 40 miles a day in this manner. A few days after the above incident young Shave pushed one of the horses 20 miles home at such a pace that it was foundered. As a consequence he did not stop in Hereford very long. He came back to London and became temporary hospital surgeon at the R.V.C. The minutes of that institution record that he received £20 for his services. This temporary post came about as the result of a great tragedy. Mr. Thomas Avis, "a young man of great promise," held the post. On July 19th, 1881, he was married "to a lady in every way suited to the rising position in his profession which his general intelligence, amiability of disposition and persevering industry were bound to secure." The bridal pair had gone to Folkestone and whilst there they went to Deal to visit friends and "the day being hot he sought the comfort of a sea bath and was drowned before the eyes of his sorrowing bride" (*The Veterinarian*, July 29th, 1881).

In October, 1879, on the recommendation of Principal Simonds, Shave was appointed assistant demonstrator of Anatomy.

In July, 1881, a Mr. W. H. Kennedy was appointed to succeed Steel as lecturer and demonstrator in Anatomy. Mr. Kennedy never took up his duties for, on October 12th, 1881, it was reported that he had resigned. Shave was selected to fill the vacancy. It would seem therefore that fate was determined that Shave should serve the Royal Veterinary College. On July 7th, 1886, he was given the title of Professor. The appointment was a part-time one for we note that at that time the Professors were allowed to leave the precincts of the College at 2 p.m. The salary of the post was £170 per year.

On March 15th, 1883, the lecturer on Anatomy was given

permission to engage in practice outside the College. This was a welcome concession, for a Professor even in those days must have found it difficult to keep up the status of his rank on £170 a year.

He opened up with a forge in Hampstead near the site of the present tube station. Success attended his efforts and he took on a young partner, W. N. Wright, who, as some will remember, practised in his later years at Torquay. They soon had three forges and one of the biggest veterinary practices in London.

Shave was an expert surgeon, specialising particularly in the Fleming operation for the relief of roaring, and neurectomy. He told me that he had often operated upon ten or twelve horses in a day. He managed to perform his duties efficiently at the College and also found time to attend a course on Pathology and Bacteriology at the University of Heidelburg in Germany. Shave had not been long at the College when Simonds' health failed. Professor Simonds was supposed to be capable of living only for a matter of months and under these circumstances the Governors of the College, with a sympathy and thoughtfulness quite unusual at that institution, awarded him a pension of £500 per year. They must have regretted this charitable urge for he lived to enjoy the pension for about 25 years. Robertson, a capable, diligent and energetic Scotsman, became Principal and under his influence the inertia of the old days was swept aside. He took note of young Shave, encouraging him in every way to advance his knowledge, and there is little doubt that he visualised his protegé as a future Professor of Pathology and, may be, Principal. During these formative years Shave was taking an active part in the clinical work of the College and laying the foundation of that clinical acumen which so distinguished him not only as a veterinary surgeon but as a human physician. In March, 1888, " In addition to Lectures on Anatomy he was called upon to take on Histology and Morbid Anatomy and also to give what assistance may be required in the infirmary practice and clinical instruction." His salary by this time had advanced to £250 per annum and it was noted in the minutes that it was to remain the same. He must have been a very busy man, for in spite of all these duties he still conducted his practice outside the College. The Professors at that time received students into their homes as paying guests and they also conducted private coaching classes outside the College. The latter were a good source of revenue and were reminiscent of the old type anatomy schools for medical students. Shave was a good coach. His classes were popular. They ranged over all the subjects in the curriculum and his pupils were remarkably successful in their examinations. It was in this manner that the Professors could secure an adequate living, for College salaries were low, especially for the part-time men.

In July, 1894, shortly after Professor McFadyean's appointment as Principal and Dean, the Professors, to their great consternation and dismay, were presented with an ultimatum. It was, " That their outside activities must cease, the alternative being to leave the service of the College." Preliminary enquiries had been made as to the amount of income that they derived from outside activities. The Professors consulted together, and thinking mistakenly that if the outside work was to be abolished an equivalent increase in their salaries would be made, they gave a true and honest account. As Professor Macqueen told me, " Their impressions had no subsequent substance in fact and as a result they were denied the butter on their bread."

Shave protested vigorously, especially as he was only a part-time man. All protestations came to no effect and they had to relinquish outside work or take the alternative. Was McFadyean to blame? Suspicion was strong at that time and is so to-day. Shave told me that the decision he had to make was not an easy one. He loved the College and enjoyed his association with the students and he was loath to give up that part of his life. He gave up his practice and his coaching classes. We know now that this suppression of Shave's practice was initiated by two distinguished members of the Council of the R.C.V.S., London practitioners—now deceased—who had become extremely jealous of Shave's success. Shave then enrolled as a Medical student at the Middlesex Hospital and in 1899, at the age of 42, he qualified M.R.C.S., L.R.C.P. I well remember his chuckle when he told me of this, adding, " And the Principal did not know of it until my plate was up."

So we see that in middle life this extraordinary man had to make a complete change in his mode of life. In Principal Robertson's time and encouraged by Robertson, Shave had taken active steps to advance his knowledge of Pathology, particularly Morbid Anatomy and Bacteriology. He was schooled to take up the task so ably initiated under great difficulties by Wortley Axe. The importation of McFadyean, under the aegis of Sir George Brown, aided by Dollar and Hunting, frustrated that dream. There is no doubt that he had devoted a lot of time and energy to Pathological studies for when I took over his old room in 1926 my explorations into the various cupboards revealed many specimens and sections covered with dust and dated in his exquisite handwriting for the period 1880-90. It is difficult to see how the College could justify their action against Shave. He was only a part-time man. If the action was taken only in the interests of the College, well, the same argument must have held good when he practised as a medical man, yet he was left in peace.

Shave put up his plate in Camden Town as soon as he qualified M.R.C.S., L.R.C.P., and it was not long before he had one of the best practices in the district. He was held in high regard in medical circles and his services were frequently sought as second opinion. He excelled in Midwifery, frequently undertaking cases for his neighbours, so that at one time he had to make a limit of 200 per year. He practised for many years from the Vicarage in St. Paul's Road and later in the Camden Road. The Vicarage was badly damaged by bombs during the recent war and, by a strange coincidence, it had to be pulled down during the week in which he died.

Although he attained success and great repute in human medicine—that great surgeon Sir John Bland Sutton, no mean judge, told me that he held Shave in the highest regard professionally as well as socially—Shave never forgot that he was a veterinary surgeon. He kept in touch with current affairs and all modern developments in the profession. He served on the Council of the R.C.V.S. from 1893 to 1899 and again from 1907 to 1921. He continued to teach Anatomy at the Camden School until 1920. In February of that year he was told that his post was to be made a whole-time job and that the salary would be £600 per year. He was given the choice of accepting or leaving. To a man of his worth £600 was a ridiculous salary, so on March 1st, 1920, he addressed a letter to the Governors declining the appointment and tendering his resignation which took effect on September 30th, 1920. So ended his direct contact with the institution which he had served so faithfully and well for 41 years. His past and present students gave him practical demonstration of their esteem and regard but in the official records of the College I failed to find a single word of thanks for his long and faithful service.

From 1920 to 1942 he acted as examiner in Veterinary Anatomy for the R.C.V.S. and from time to time for the Universities of London, Liverpool and Edinburgh. He made

an ideal examiner. He was competent and fair, and his kind manner soon put a candidate at ease so that he could give of his best. Often he would give much more information than he received, yet I never knew him to make a mistake in his estimation of a student. No student ever failed for the want of one or two marks. " You can't do that, it's not fair," he would exclaim.

Shave the Man

Teddy Shave was a reality to me before I joined the Royal Veterinary College as a student. One could not be in the company of an old London graduate long before his name would be mentioned and always with the deepest regard. I could have recounted much about him, for the stories of his skill, his wit and, above all, his gracious kindness were as real to me as if I had been his familiar. It was therefore with eager anticipation that for the first time I climbed the iron staircase which led from the bed to the long class room. We freshmen were strangers to one another but we sorted out our seats and sat awaiting his arrival. First an individual whom I subsequently knew as " Bony Edwards " entered *via* the door behind the rostrum, gave the latter a perfunctory dusting and cast a contemptuous eye at the assembled throng. Promptly at nine o'clock the door again opened and a small spare man came quietly in. He wore a tall hat on the back of his head and a long black overcoat which was lined with a foal's skin. He looked old, his hair was white and bristley, his fine drawn face was wrinkled and he peered at us through plain gold spectacles mounted on a sharp aquiline nose. Those eyes attracted me for they had a kind roguish twinkle as if full of humour. He opened the desk, picked out the register and called our names in a quiet voice with an eastern counties twang, and glanced at each man as he answered, no doubt to fix us in his memory. He then picked up a scapula and walking slowly up and down the central gangway told us all about it. As I watched him, for that was all I could do —his dissertation being so foreign to me that I did not understand it—I could not help but think that the Pied Piper of Hamelin must have been such a man as this. He looked so old to my young eyes that I thought that he must have been at Camden Town ever since the College was built.

Thus was my introduction to the man who was to play such a part in our lives and gain our love as if he were our father.

It took some days to reach an understanding of his remarks about the bones but in due course I got the hang of things and could appreciate that here was a master of description who far surpassed any teacher at school. He would walk up and down so sedately and gently that you could scarcely hear his tread and his speech was slow and deliberate as if he considered every word. When he wanted to emphasise some point he would pause in his perambulation, give the nearest student a dig in the ribs and say, " Now you will remember that, won't you." Now and again he would ask a question and if the answer was correct he would say, " That's right " ; if the reverse was the case it would be, " Who said that, was it the man in the book ? " Sometimes, to make his point, he would call on a student to examine a part of his own anatomy and tell us what shape it was. This, of course, was often to the embarrassment of the victim but gave great joy to his fellows. His wit was sparkling and his repartee brilliant. I never saw Teddy flurried or excited. He seemed to be always master of the occasion. I never knew him to lose his temper and he was never known to report a student to the Principal. There was something about him that made us know that he would never let us down and we in turn never took advantage of him as we did occasionally of other teachers. He took everything that came along in his stride. When passing the bed on the way to the long class room some of us picked up Harry Dillon's three cats. These we placed in the desk in which the register was kept. As he opened the desk the cats flew out. Teddy laughed and said, " Damn the cats, you can't move for them during the day and at night they come howling round your windows."

No man could put more expression and meaning into the exclamation Ah! He called the examiners " The Men." In reply to a query he would say, " Ah! did the man ask you that." One day an academically inclined anatomist ventured to rebut a statement of " Teddy's." " Ah! " he said, " you know why you say that, it's because you don't know." On another occasion one of the examiners, a medical man, appeared to be giving the students a very hard time. Shave and I fully expected his marks to be very low ; instead they were exactly the reverse. " Ah! " said Teddy, " I understand that you intend to take this examination." " I hope to have that honour, Sir," replied the medical man. " Ah! you ought to have been sitting to-day for you would have sure passed."

His reminiscences of College life could be highly amusing. He said that the Zoologists were always a trouble. He told us of one in particular whose control over his class was so poor that Shave was ordered by the Principal to sit in the lecture room in order to preserve discipline. This man had the audacity to take his students on a botanical excursion to Golders Green, then well in the country. He discoursed on the plants and grasses in the fields. Some of the students said that they could not hear him and they persuaded the poor chap to mount on to a small stack and use it as a rostrum. He acquiesced, for he was delighted at the great interest shown. The students promptly set the stack on fire and he was rescued only with great difficulty. The last Teddy saw of this man was when he was running up Crowndale Road pursued by a mob of howling students. When I remarked that the students were very unkind, Shave replied, " Well, what could you expect when the man spoke of ' Wabbits and Wats '." In my time Shave departed to his medical practice immediately after the morning lecture. He would return and come into the dissecting room at two o'clock. Here he was very instructive and amusing. He never handled a specimen but if he wished to point out some structure he would seize the nearest student's index finger and use it as a pointer. I never saw him use the blackboard or draw a diagram except on one occasion when he did a sketch on the back page of the register. He showed this all round the class, remarking, " Now you'll remember that wont you ? " One could go on and on relating such anecdotes but space forbids and many would lose their flavour in bald print.

Shave was a man of first rank in Anatomy. His academic knowledge was profound yet he was always at pains to stress the points of clinical interest. As far as I can discover he never recorded his observations on Veterinary Anatomy. Mr. Edward Gerrard told me that Shave had a book, which had been beautifully illustrated by the first Mrs. Shave, ready for publication at one time but the issue of either McFadyean's Anatomy or Sisson forestalled him and the MSS were never put into print. Shave was a first-rate clinician in both veterinary and medical fields yet again he remained silent. We see little record of his work in Council yet he must have been a good committee man for his contemporaries thought highly of his work.

How was it that this man carved such a permanent place in our affections that his memory will live long after those of his more verbose contemporaries are forgotten ? I think it was because of his inherent humanity. This kind, quiet man was at once our mentor, physician and friend. He had a kind word for all and was never known to speak ill of anyone,

even of those who had injured him. He set us a supreme example of the way in which a true English gentleman should conduct his life. Throughout his life he had many family difficulties, for his relations all leaned on him when in any trouble. Yet he never complained. He was blessed in his own home. He was married twice and no man could have wished for better partners. His first wife was known and loved by generations of veterinary students. His second wife, who survives him, devoted her life to his care and comfort in his declining years. We, his old students and friends, thank her and we will be ever in her debt.

He was buried at Bexhill on Thursday, August 25th. As I stood with my colleagues at that simple ceremony I felt that things could never be quite the same again. We were seeing the last of a man who had lived so long that we have taken him for granted as a permanent institution, a man who had been so gentle, so kind and so wise. Never again would we be able to take our troubles to "Teddy," our beloved teacher.

J. McCunn.

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A FURTHER TRIBUTE

For more than 50 years it was my privilege to know Shave, firstly as one of his pupils, and then as a colleague. From the outset I seemed to enjoy his close friendship. This might in part be due to the admiration we both held for his subject. He most certainly held it in reverence. I recall that on occasions when tribute was paid to him he invariably replied that he regarded it as being to the subject which he "had the honour of representing."

The history of Anatomy is studded with cases of desertion to fields considered to be more fashionable or more lucrative: not so Shave—he remained an anatomist to the end, notwithstanding the fact that he had to adopt other methods of augmenting his income—for some years by taking private pupils into his home and subsequently by devoting some of his time to the medical practice which he developed in his area, for he qualified in both human and veterinary medicine. Any avenue was widely open to him on qualification—for he was the finest student of his time. Veterinary anatomy was his choice, and there must still be alive many hundreds who could testify to the advantage his personal selection brought to them. It would, of course, be difficult to assess the reciprocal effects of Anatomy and Shave one on the other—but the clarity of his vision and his pointed expression were outstanding characteristics to which the subject may have been no mean contributor, for it cannot be denied that there is no other subject with a greater claim to the development of a keen faculty of observation without which sound judgment and reasoning power can scarcely be expected, and his judgment was so sound that Simpson Shave was as great at analysing character as he was skilful in dissecting the body.

Physically he would not be regarded as a strong man but he had a wiry constitution. With this was associated a placid, even temperament. I never knew him two days different. Of a subdued voice, his manner of speech was persuasive and attractive rather than eloquent. His facial expression was always pleasing, never without some suggestion of a smile. He had a profound knowledge of Anatomy, indeed, of affairs generally, and in conversation was most engaging and ever interesting. These qualities were exhibited in one whose education in its true sense was on a high plane, for he had a rare capacity for distinguishing sharply true dignity from what is commonly regarded as "side." He had contemporaries whose conception of dignity was the converse.

Never a place seeker, his pen was facile and he was endowed with a sense of humour that was quaint almost to the degree of being unique. The influence of Shave on others was a thing that endured. His wisdom, judgment, steadfastness of purpose, generosity of thought and deed, and kindly spirit were some of the factors which combined, made of him a rock upon which one could lean in times of need. It is for these personal qualities which were his great endowment that he will be remembered rather than for the written word, for circumstances were such that he wrote little. Incidentally, in parenthesis, my indebtedness lies in the very many hours of happy association with him and Macqueen, both of whom I was privileged to serve, in the little common room we shared behind the long class room, the name by which the converted hayloft was designated. This happy association commencing then has continued throughout life and he has died at 93. It will henceforth be a cherished memory.

Shave's tenure of the professorship at the R.V.C. was during what represented possibly the peak period of the college history. It was the era of horse practice at its best and it is doubtful whether veterinary practice in any other species will ever attain the degree of perfection such as was achieved by the numerous horse practitioners of Shave's time: so proficient were they that their work was the means of investing the verb "to Vet" with the highly respectable meaning which it enjoys now as a permanent addition to our vocabulary. The small animals provide possibly the next best field. The buildings were, of course, old—some had been up a century—the classes very large. In Shave's department there would be about 160 students spread over the first and second years, and over 300 in the college. Yet this big department was run by Shave with one demonstrator and two porter assistants—one attending to the bone room, the other to the dissecting room. The students of Anatomy were in four groups, two preparing for examination in December and two (the main groups) in July (one examination—in March—was dropped in 1895). Looked at from to-day's standards it will be seen how hard the staff worked. Dear old Henry Power, the last of the doctors of the novelist with flowing white hair, mutton chop whiskers, but otherwise clean shaven, took the senior classes in Physiology, and his son D'Arcy (afterwards Sir D'Arcy) assisted his father by taking Histology—with two bottles of canada balsam floating around to meet the requirements of a practical class of some 50 students. But both were magnificent teachers: Henry Power's poetic language—a natural orator with a wealth of anecdote drawn from over 50 years' clinical experience in the largest London hospitals, illustrating lectures that became a reality. His lectures were at nine o'clock, and though he was nearing 80 one's watch could be set by the time the grand old gentleman entered.

D'Arcy's teaching was life itself. To him a blackboard was a real instrument of instruction. These were Shave's opposite numbers in Physiology. Elaborate material equipment was wanting (as I knew it was at other London institutions in human medicine at that time) but the keynote was work—which was inspired by the heads of the departments. To judge the results one need only examine the future careers of the students of this time, and such an examination is the only true basis of assessment to find abundant evidence supporting the contention that whatever else there might be, the best item of equipment in the practice of instruction and educational training is the man or woman to whom the students look for inspiration. This they got in plenty from Simpson Shave in Anatomy and his colleagues in Physiology.

It would seem somewhat necessary to emphasise this to-day, when in certain quarters the case for buildings is taking precedence over the demand for endowment for men, that will give them security of tenure in their office and freedom of action in the interpretation of their mission as teachers and educators.

J. Share-Jones.

NOTES AND NEWS

Diary of Events

Oct. 19th.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, at 1, Wimpole Street, W.1, 5 p.m.

Oct. 19th.—Meeting of the Southern Counties Division, N.V.M.A., at Bournemouth (Grand Hotel), 6 p.m.

Oct. 19th.—Meeting of the Scottish Metropolitan Division, N.V.M.A., at the Royal (Dick) Veterinary College, Edinburgh, 2 p.m.

Oct. 20th.—Meeting of the Hertfordshire and Bedfordshire Veterinary Society at 70, Holywell Hill, St. Albans, 2.30 p.m. (*Note alteration of date from last week's announcement.*)

Oct. 20th.—Special Meeting of the East Midlands Division, N.V.M.A., at Sutton Bonington (Midland Agricultural College), 2.15 p.m.

Oct. 21st.—Extraordinary Meeting of the Midland Counties Division, N.V.M.A., at the Birmingham Chamber of Commerce, 95, New Street, 2.30 p.m.

Oct. 21st.—Meeting of the Mid-West Division, N.V.M.A., at Bristol (Berkeley Café, Clifton), 2.15 p.m.

Oct. 22nd.—Meeting of the North of Scotland Division, N.V.M.A., at Inverness (Drumossie Hotel), 2.30 p.m.

Oct. 22nd.—Meeting of the Biochemical Society at King's College, Strand, 2 p.m.

Oct. 26th.—Meeting of the Lancashire Division, N.V.M.A., at Manchester (Grand Hotel, Aytoun Street), 2.30 p.m.

Oct. 27th.—Meeting of the South Eastern Division, N.V.M.A., at Maidstone (Royal Star Hotel), 2.30 p.m.

Oct. 27th.—Meeting of the West of Scotland Division, N.V.M.A., Clinical Club, in the Veterinary School, Glasgow, 7.30 p.m.

Oct. 28th.—Meeting of the Welsh Branch, N.V.M.A., at Newtown (The Bear Hotel), 2 p.m.

Oct. 28th.—Meeting of the Sussex Division, N.V.M.A., at Brighton (The Old Ship Hotel), 2.30 p.m.

Oct. 31st.—Commencement (in London) of R.C.V.S. Animal Management Examination.

Nov. 2nd.—N.V.M.A. Technical Development Committee, 11 a.m.

Nov. 4th.—R.C.V.S. Pharmacology Examination (written).

Nov. 5th.—Annual General Meeting of the Society of Women Veterinary Surgeons, at the Royal Veterinary College, Camden Town, N.W.1, 2 p.m.

Nov. 7th.—R.C.V.S. Pharmacology Examination (oral and practical), London and Dublin.

Nov. 9th.—Meeting of the N.V.M.A. Technical Development Committee, 11 a.m.

Nov. 11th.—R.V.C. Students' Union Society Annual Ball. (See Notice.)

Nov. 12th.—Dinner of the Southern Counties Division, N.V.M.A., at Southampton (Polygon Hotel), 7.30 p.m.

N.V.M.A. Committee and Council Meetings

The following are the arrangements for meetings of Committees and Council of the Association to be held in London in November:—

Tuesday, November 15th:

11 a.m.—Parliamentary and Public Relations Committee.
2 p.m.—Organising Committee.
4.15 p.m.—Home Appointments Committee.

Wednesday, November 16th:

10 a.m.—Veterinary State Medicine Committee.
2 p.m.—General Purposes and Finance Committee.

Thursday, November 17th:

11 a.m.—**Meeting of Council.**

Friday, November 18th:

10.30 a.m.—**Special Meeting of Council.**

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N.V.M.A. Congress, Cardiff, 1950

The first meeting of the Provisional Committee for the above Congress was held in the City Hall, Cardiff, on Friday, September 30th. Mr. R. W. Hall, M.R.C.V.S., of Barry, was appointed Chairman of the Committee, and Mr. J. H. M. Hughes, M.R.C.V.S., D.V.S.M., of Cardiff, Hon. Local Secretary.

PERSONAL

Appointment.—Mr. R. V. Blamire, M.R.C.V.S., D.V.S.M., has taken up his duties as Assistant Veterinary Officer with the Corporation of London at the Islington Abattoir, and also as Assistant Veterinary Inspector for the City of London under the Diseases of Animals Acts.

Mr. Blamire qualified from the Royal (Dick) Veterinary College in July, 1945, having obtained Second Class Honours in his first and second years, and credits in Anatomy and Veterinary Hygiene in his third year.

He was commissioned in the Royal Army Veterinary Corps in August, 1945, and served in India, Burma and Singapore. He was released from the Army in 1948 with the rank of Staff Captain.

On his release from the Army, Mr. Blamire again took up his studies at the Royal (Dick) Veterinary College and obtained his D.V.S.M. in June this year. He then secured appointment as a Veterinary Inspector on the staff of the Ministry of Agriculture and Fisheries, which appointment he relinquished to take up his present duties with the Cattle Markets Committee of the Corporation.

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Births.—Good.—On October 3rd, 1949, at 10, Caledon Street, George, South Africa, to Mary, wife of F. D. T. Good, M.R.C.V.S., a sister (Teresa) for Louise, Rosemary, Robert and Adrian.

Schwabacher.—On October 8th, 1949, at Chalfonts Nursing Home, to Gladys (*née* Lethbridge), wife of E. N. Schwabacher, M.R.C.V.S., a son—Andrew John.

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Will.—Mrs. Kathleen Mary Christian Hamilton Rees-Mogg, of Clifford Manor, Stratford-on-Avon, wife of the late Veterinary Lieutenant-Colonel G. B. C. Rees-Mogg, Royal Horse Guards, and daughter of the late Sir Frederick Wills, left £1,787,399.

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The British Association Meeting.—As previously intimated, Mr. D. D. Ogilvie addressed the Chemical Section of the meeting of the British Association held recently at Newcastle. A second member of the profession, Mr. E. O. Longley, B.SC., M.R.C.V.S., similarly was honoured by an invitation to present a paper, this being for September 2nd at a joint meeting of the Sections of Psychology and Physiology, for discussion of "The Relation of Brain to Mind." The paper was entitled "Objective Tests for Consciousness," but unfortunately circumstances prevented Mr. Longley's attendance.

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RESTORATION TO R.C.V.S. REGISTER

Mr. W. G. R. Oates, as Registrar under the Veterinary Surgeons Acts, 1881 to 1948, informs us that the names of:—

Adrian Augustus Abbott,
104, Ainslie Street,
Grimsby, Lancs,

and

Rupert Morford,
Mendip Inn,
Gurney Slade, Nr. Bath,

were restored to the Register of Veterinary Surgeons on September 27th, 1949.

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R.C.V.S. OBITUARY

Murphy, Stanley, Hetland, Ardwell Road, Dumfries. Graduated Edinburgh, December 11th, 1948. Died September 30th, 1949.

Mr. Stanley Murphy, B.SC., M.R.C.V.S.

A Tribute

Mr. Stanley Murphy died as the result of a motor-car accident in which he was involved, and the widespread regret which will be felt at the loss of this gifted young practitioner less than a year after his graduation from Edinburgh is expressed in the following tribute.

Grievous indeed was the fate that brought about the tragic and untimely passing of Stanley Murphy and which caused such great shock and cast such wide shadows of gloom, for, by reason of his open and friendly approach he had endeared himself widely.

Added to his charm of manner was a boundless energy and it was clear to all who knew him that the enthusiasm with which he entered into the practice of his profession, allied to exceptional

proficiency, would, had kinder fates prevailed, have destined him to become prominent.

It is with bitter regret that I ask you to record the loss of one who was upon the threshold of a career which held such brilliant promise, who was so in love with life that his interests were legion; particularly prominent amongst these were his fondness of music and his skill as a wood engraver. By his personality alone, however, Stanley Murphy would have been outstanding in any role of life. B. Y.

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Veterinary Council of Ireland

The Veterinary Council of Ireland, which is the governing body of the veterinary profession within the Republic, held a dinner at the Royal Hibernian Hotel, Dublin, on Monday, October 3rd, at which the Council had the great honour of having as principal guests the Prime Minister, Mr. Costello, and the Minister for Agriculture, Mr. Dillon.

The other guests were Professor Tierney, President of University College, Dublin, and the President of the Royal College of Physicians of Ireland, Dr. Solomons, as well as the President, Professor T. Dalling, and the Registrar, Mr. W. G. R. Oates, of the Royal College of Veterinary Surgeons.

The toast of Agriculture was proposed by Mr. J. D. Whitty, President of the Veterinary Medical Association of Ireland, and was replied to in a fluent and witty speech by the Minister for Agriculture, Mr. Dillon, who paid a tribute to the work not only of the Veterinary Department but also of the individual veterinary surgeons in the Republic.

Professor Tierney, President of the University College, Dublin, in proposing the toast of the Veterinary Profession, mentioned the fact that it was hoped shortly to introduce the system of registrable university degrees in the Republic in the same way as has already been done in Great Britain under the Veterinary Surgeons Act, 1948. This toast was replied to by Professor Dalling, President of the Royal College of Veterinary Surgeons, in a sincere and thoughtful speech which mentioned the problems facing the veterinary profession in the world and the way they were tackled in the Republic.

Lastly, Professor W. Kearney, of the Veterinary College, Dublin, and a member of the Council of the Royal College of Veterinary Surgeons, proposed the toast of the Visitors, which was replied to by the Registrar of the Royal College, Mr. W. G. R. Oates, who mentioned that it was very rare that a Registrar had the opportunity of speaking on behalf of such distinguished guests as a Prime Minister and a Minister for Agriculture.

Mr. J. Flynn, President of the Veterinary Council, presided at the dinner and both he and other eminent veterinary surgeons, from the moment of meeting the President and the Registrar of the Royal College of Veterinary Surgeons at the airport, gave the representatives of the Royal College the warmest welcome and hospitality.

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International Dairy Congress, Stockholm, 1949

Entertainment of Foreign Veterinarians

[*Contributed*]

In the course of the International Dairy Congress at Stockholm (August 14th to 21st) the Swedish Veterinary Association entertained the foreign veterinarians visiting the Congress. The visitors were taken in a motor coach from the House of Parliament in Stockholm, where the conference was held, out through the delightful archipelago of some thousands of islands that extend from Stockholm to the sea. Many people in Stockholm and its surroundings have summer houses in the archipelago and the party was entertained at the house of Dr. and Mrs. R. Larsson. Dr. Larsson is the City Veterinarian, Stockholm.

The journey was most interesting. After leaving the centre of the city the route was past large shipyards and harbours, then on to Värmdö, one of the largest islands in the archipelago, and past Gustafsberg, where there is a great porcelain factory. At Ramsmoraviken, about 45 km. from Stockholm, the coaches were taken on a ferry across to the island of Djurö, one of the larger islands near Kanholmsfjärden Bay in the neighbourhood of Sandhamn, the headquarters of the well-known international yachting regatta. The route was through beautiful country with great variation, woods, open fields, pretty little creeks, farm land, etc., and passing many summer houses.

Among the foreign veterinarians were: Professor Aage Jepsen, of the Copenhagen Veterinary and Agricultural College; Dr. Svend O. Koch, Aarhus, Denmark; Dr. W. Ehrström, of Helsinki, Finland; Dr. L. Fabritius, Abo, Norway; Dr. C. S. Aaser, of the Oslo Veterinary College; Professor P. Kästli, Berne; Professor L. Grassi, Italy; Dr. Salvador E. Marti Güell, Inspector General of the Veterinary Service, and Professor Luis de Cuenca Carlos, Spain; Professor G. Thieulin and Dr. Louis Feunteun, France. The Republic of Ireland was represented by Mr. J. A. Flynn and Mr. McCarthy, Northern Ireland by Dr. H. G. Lamont, Australia by Mr. McClymont and Mr. Turner, Kenya by Mr. Piercy and Gold Coast by Mr. Simpson. In addition there were Mr. J. N. Ritchie, Professor A. Robertson, Mr. W. A. Allan, Mr. D. L. Hughes, Dr. W. M. McKay and Mr. W. A. Pool.

Among our hosts were Dr. G. A. Bouveng, Director of the State Veterinary Board, Veterinärradet Dr. H. Bengtsson, Professor K. Lilleengen, Royal Veterinary College, Stockholm, and other veterinarians from the Food Control Department and Laboratories in Stockholm.

The party had a truly international flavour. They were most hospitably entertained at a dinner, at which, after our Swedish friends had given some good Swedish community songs, the British and other nationalities contributed their share with the products of their own countries.

On behalf of the guests, Mr. Ritchie thanked our hosts for their great kindness and for the most interesting and enjoyable excursion, and he tendered greetings to our Swedish colleagues from the National Veterinary Medical Association of Great Britain and Ireland.

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DEVALUATION REACTIONS

"The need for cutting down our imports of grain and feeding-stuffs will necessitate an even more vigorous drive for increased production in our own country," states *The Scottish Farmer*, and continues: "The increase in the price of imported tractors, with their equipment and fuel, may result to some extent in an improved demand for the farmer's own home-produced source of power, the horse, which is bred and reared on the farm and lives on the produce of the farm and requires no costly imported fuel to keep him moving, but which, unfortunately, has been disposed of too quickly in many cases in favour of machinery. Then breeders of pedigree livestock are hopeful that the lower value of the pound may induce more Americans to come over here to buy cattle. At the autumn Shorthorn sales of the last two years many animals were bought for America, and there was a belief that the Americans would buy more if the exchange rate were more in their favour."

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TRICHOSTRONGYLUS AND STRONGYLOIDES

"Infestation of herbivorous mammals with various species of the nematode *Trichostrongylus* is common throughout the world, far more so than human infestations, which formerly were regarded as accidental, the result of proximity to infected domestic animals," states the *British Medical Journal* in its issue of October 8th, and continues: "But records of *Trichostrongylus* as a human parasite have been appearing with increasing frequency, from India, Russia, Africa, N. America, and especially from the Far East, where *T. orientalis* is stated to be not uncommon as an infection in agricultural workers. The account in last week's *Journal* (p. 737) of a helminth survey in Abadan by Dr. I. S. Stewart serves to emphasise the probability that *Trichostrongylus* may have a much wider range in the human host and be more prevalent than was suspected, for in routine faecal examinations its eggs may easily be overlooked because of their close resemblance to those of hookworm. Although the degree of the infection in the Abadan survey was light, the number of positive results recorded (70 per cent.) is surprisingly high, and suggests not only that the circumstances are favourable for oral ingestion of the infective larvae but that the species appears readily adapted to the human host. The identity of this species is not yet known, but failing its determination by the recovery of adult worms at necropsy some information might be obtained by identifying the species harboured by the local sheep, which are evidently the original source of the human infection.

"In quite a different category is *Strongyloides* (*S. stercoralis*), a well-established human helminth which is harboured by some 35 million people in tropical and subtropical countries; its distribution is similar to that of hookworm. Unlike *Trichostrongylus*—the similar sounding name is of little significance—whose life-cycle is direct and simple, *Strongyloides* undergoes a very complex and varied development. This is exemplified particularly in its free-living or exogenous phase, which culminates in infective skin-penetrating larvae comparable with those of hookworm or in a free-living sexual generation which in turn produces infective larvae. Research in recent years has shown that the parasitic phase in the

human body is also highly complex. Contrary to the belief that no helminth can multiply inside the body of its host but must pass its offspring to the exterior, the larvae of *Strongyloides* are apparently capable of substituting an internal migration for the usual external migration. They pass from the small intestine, where the parasitic females reside, through the gut wall to the circulatory system, thence to the lungs and back to the intestine, where they reach maturity. Pulmonary changes, of which Dr. F. L. Corrigan has recently recorded an interesting example in this *Journal* (October 1st, p. 738), are associated with this phase, in which, it is assumed, repeated invasion of the tissues by the migrating larvae reduces the local tissue resistance."

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FLUORINE IN FOODS

The Ministry of Education's appointment of a Working Party[1] to investigate the prophylactic effect of locally applied fluorides has once more drawn attention (states *The Lancet* in its issue of October 8th) to the dual rôle of fluorine in human nutrition.[2]

In early life the risk of dental caries is reduced by drinking water containing about one part per million (p.p.m.) of fluorine; but many communal water-supplies do not provide this amount. McClure[3] has shown that the urinary fluorine content is a valuable guide to the intake of fluorine. The average diet appears to yield about 0·2 to 0·3 mg. daily. Most foods contain 0·2 to 0·3 p.p.m. or less, but tea and sea-foods are notable exceptions; dry tea contains 75 to 100 p.p.m. and sea-foods 5 to 15 p.p.m. Cow's milk contains about 0·1 to 0·2 p.p.m.; and when the cow is fed with additional fluorine the content in the milk is not increased. Nor does the fluorine content of edible plants vary appreciably with differing concentrations of fluorine in the soil and water of the place where they are grown; the high figures occasionally reported for leafy vegetables have been related to atmospheric pollution from nearby industries.

In childhood the average diet does not yield enough fluorine to safeguard the teeth. Up to the age of 16 an additional 0·4 to 1·1 mg. of fluorine, according to age, should be assimilated each day beyond what is contained in the food and in drinking water (on the assumption that the optimum fluorine content of drinking water is 1 p.p.m.). A supplement to make good this deficiency may perhaps be justified.

References

1 See *Lancet*, September 3rd, p. 446.
2 Murray, M. M., Wilson, D. C. *Ibid.* (1946.) ii, 821.
3 McClure, F. J. *Publ. Hlth. Rep., Wash.* (1949.) **64.** 1061.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

THE TREATMENT WITH VITAMIN B_1 OF BRACKEN STAGGERS IN THE BOVINE

Sir,—Following the recent communication (*Vet. Rec.* **61.** 549), regarding the successful use of vitamin B_1 in bracken staggers in the horse, similar measures were adopted on two farms where poisoning was suspected in cattle.

In both instances bracken was available to the animals and, on Farm B, one heifer was observed eating it.

Aneurin hydrochloride in sterile solution was in all cases injected subcutaneously.

Farm A

Symptoms.—Initial temperature, 107°. Staggering. Scurfy coat. Petechial haemorrhages in the nose and vulva.

Breed	Sex	Date	Temp.	Treatment	Remarks
Hereford	F.	28.8.49	107°	1 lb. mag. sulph.	Staggering
		29.8.49	107°	70 c.c. soluseptasine	
		30.8.49	107°	100 mg. B_1	
		31.8.49		100 mg. B_1, a.m. and p.m.	Heifer down
		1.9.49	105°	100 mg. B_1, a.m. 50 mg. B_1, p.m.	
		2.9.49	104°	50 mg. B_1, a.m.	
			100·8°		Died p.m.

Post-Mortem Examination.—This showed general symptoms of acute toxaemia.

Farm B

The following animals were moved to fresh grass from bracken infested pasture on August 27th, 1949.

Breed	Sex	Date	Temp.	Treatment	Remarks
1. Welsh Black	M.	27.8.49	104°	70 c.c. soluseptasine	Died 28.8.49
2. Welsh Black	M.	27.8.49	104°	70 c.c. soluseptasine	
		30.8.49	104°	25 mg. B_1	
		31.8.49		100 mg. B_1, a.m.	Died p.m.
3. Shorthorn ...	F.	31.8.49		100 mg. B_1	Down in field
		1.9.49			Died a.m.
4. Cross ...	F.	31.8.49	104°	100 mg. B_1	Observed eating bracken
		1.9.49	104°	100 mg. B_1, a.m.; 100 mg. B_1, p.m.; 1,000,000 units penicillin; 2 oz. sulphanilamide	
		2.9.49	101·5°		
		3.9.49	102°	100 mg. B_1, a.m.; 75 mg. B_1, p.m.; 1 lb. mag. sulph.	Not eating, constipated
		4.9.49			Slaughtered
5. Cross ...	M.	31.8.49			No staggering
		1.9.49	104°	100 mg. B_1	
		2.9.49			Died
6. Cross ...	F.	1.9.49	104°	100 mg. B_1; 500,000 units penicillin; 2 oz. sulphanilamide	No staggering
		2.9.49	103°	1 oz. sulphanilamide	
		3.9.49	102°	50 mg. B_1	Animal normal
7. Cross ...	F.	31.8.49	105°	100 mg. B_1	Slight staggering
		1.9.49	104°	100 mg. B_1; 500,000 units penicillin; 2 oz. sulphanilamide	
		2.9.49	102°	1 oz. sulphanilamide	
		3.9.49	101·5°	50 mg. B_1	Animal normal
8. Hereford ...	M.	Same as above.		No penicillin in treatment	

Symptoms.—The first four cases showed an initial temperature of 104°, a staggering gait, scurfy coat and scouring with blood in the faeces.

Subject 5 went down in the field.

Owing to severe losses the remaining three animals were brought in on August 31st and examined. In each case the temperature was 104° though the animals appeared normal. The only later symptom noted was scouring.

OBSERVATIONS

In the above doses and conditions aneurin hydrochloride was found to be of no practical use when the clinical symptoms of bracken staggers had appeared.

Vitamin B_1 may have aided the recovery of those animals whose only symptoms were a raised temperature and scouring.

It is interesting to note that it was the indigenous Welsh Black which first showed the symptoms of bracken poisoning.

Yours faithfully,

K. L. VAUGHAN

(Student with G. J. Roberts, F.R.C.V.S., and R. T. Roberts, M.R.C.V.S., Pwllheli, North Wales).

33, Greenbank Road,
Liverpool, 18.
September 28th, 1949.

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THE ELECTRIC BLANKET

Sir,—I should like to endorse the recommendation of the "Wyndak" electric blanket appearing in your issue for September 3rd. These blankets were in use by me at the Zoological Gardens, London, during the record cold spell of 1947 and subsequently, in both medical and surgical cases, and in a wide variety of conditions and species, and it would be impossible to exaggerate their clinical value.

I can confirm that the detoxification-time with barbiturate anaesthesia is appreciably reduced, with the comment that I have seen a case conscious and ambulatory within 40 minutes of light-medium nembutal anaesthesia, where the blanket was employed.

This feature brings forward a special application of the blankets and which has not been mentioned. For if detoxification is accelerated to this degree, here is an analeptic measure available for exploitation where overdose of an anaesthetic may have been given, and of special value in the case of a relatively slowly detoxifying agent such as nembutal. With such agents resuscitation is fundamentally different in principle as compared with inhalation-anaesthesia. In the latter case, artificial respiration is also a true remedial measure, accelerating elimination of the drug. With such a barbiturate as nembutal, it is no more than a poor palliative, since recovery is solely dependent on detoxification of the drug. Acceleration of the metabolism to this end and by such means as this does thus constitute the only truly rational therapy, while at the same time the elevated temperature combats sub-thermal depression of the respiratory centre.

It is true that such anaesthetic calamities are rare indeed in expert hands. But not all are, or are to be expected to be, experts nor account themselves as such. And this measure is entitled to emphasis if only for saving the exceptional case. Moreover, the analeptic principle applies in lesser degree also in inhalation anaesthesia, by promoting both the cardiac and respiratory functions, on which clearance of these anaesthetics is dependent. It should therefore have value in the large animal as well as the small. (The writer has used this blanket on the sick Indian elephant.)

In this context the affinity of the sick animal for its electric blanket is almost pathetic, and, if there is any validity in instinctive behaviour, is its own recommendation for the provision of the heat. Yet a further possibility arising in certain medical and toxic surgical cases is the use of the blanket for artificial pyrexia and hyperpyrectic treatment. This form of physiotherapy has not to my knowledge had recorded trials in the veterinary field, and mine has been very limited experience indeed in its use. But in two highly toxic cases, which were adjudged hopeless, it is the fact that the application of the blanket and deliberate maintenance of the body-temperature over long periods at 4° F. above normal was followed by recovery, and it is thought that this practice should be given fair clinical trial in similar cases.

A general warning is, however, to be sounded. As thermal control in all animals is vastly inferior to that in man, not only is artificial temperature control relatively easy, but in the poikilothermic anaesthetised animal the temperature responds with potentially dangerous alacrity to any environmental heat-influence (as to cold). Thus, with the application of the blanket post-operatively after nembutal, the temperature has been observed to elevate from 94·0° to 102·8° F. in three hours, and such moderate hyperthermia unquestionably accelerates recovery. The increment was linear and is a rise of nearly 9° at a rate of 3° F. per hour. In the toxic (unanaesthetised) subjects cited, the temperature rose sometimes 3° in 1½ hours—a still considerable rate of rise. The warnings are that, although with the "Wyndak" blanket properly applied there is no possibility of dangerous overheating, the same is not true of other blankets on the market, nor is their operation-voltage always safe for use in the proximity of animals, as is the case here.

Yours faithfully,

E. O. LONGLEY.

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"THE PSYCHOLOGICALLY ABERRANT CASE"

Sir,—Having seen the recent correspondence in *The Veterinary Record* on the subject of the psychologically aberrant case, I think your readers may be interested in a case I am treating this week. The dog is a three-year-old pointer and for hours on end will go down to the bottom of the owner's garden and prance round a tuft of grass, barking until it is exhausted. He will stop barking if shouted at, but it requires great resistance to immobilise him.

The garden is not enclosed except for a barbed wire fence under which the dog can pass easily.

The owner informs me that before she moved into this house the dog did the same thing at her old house in York; only instead of the "exciting agent" being a tuft of grass it was a chopping block.

I am treating the dog for eczema, not for the above condition.

Yours faithfully,

CLEMENT FENNELL.

Well, Long Sutton,
Basingstoke, Hants.
September 29th, 1949.

ADDRESS OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

SHEEP SCAB:

Lancs.—Robert Laithe Farm, Laneshaw Bridge, Colne (Oct. 6th.).

ADVERTISER'S ANNOUNCEMENT

Glaxo Laboratories, Ltd., Greenford, announce a substantial reduction in the price of their veterinary products Procaine Penicillin G Veterinary Cerate Glaxo and Penicillin G Veterinary Cerate Glaxo. Details will gladly be forwarded from Greenford upon request.

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3. Supply of prophylactic or therapeutic agents for veterinary purposes direct to the lay public may be regarded as adequate reason for refusing publication of any or all advertisements submitted by the firm concerned.

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5. If any specific claims are made by the advertiser in relation to any product, they should be stated, briefly, or at length, as part of the advertisement and should be in reasonable accord with claims published elsewhere or commonly associated with the product.

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